

ASIAN RURAL SOCIOLOGY IV

*“The Multidimensionality of Economy,
Energy and Environmental Crises and
their Implications for Rural Livelihoods”*



Asian Rural Sociology Association
International Conference

September 7-10, 2010
Bicol University, Legazpi City, Philippines

Volume II

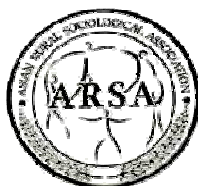
Editors:

Lutgarda L. Tolentino
Leila D. Landicho
Surichai Wun'Gaeo
Koichi Ikegami



ASIAN RURAL SOCIOLOGY IV

***“The Multidimensionality of Economy,
Energy and Environmental Crises and
their Implications for Rural Livelihoods”***



Asian Rural Sociology Association International Conference

September 7-10, 2010

Bicol University, Legazpi City, Philippines

Volume II



Editors:

Lutgarda L. Tolentino

Leila D. Landicho

Surichai Wun'Gaeo

Koichi Ikegami

ASIAN RURAL SOCIOLOGY IV

“The Multidimensionality of Economy, Energy and Environmental Crises and their Implications for Rural Livelihoods”

Copyright© 2010

Asian Rural Sociology Association (ARSA)

Email: arsa_1996@yahoo.com

Website: www.arsa1996.org

Editors: Lutgarda L. Tolentino, Leila D. Landicho, Surichai Wun’Gaeo, and Koichi Ikegami

Layout and design: Reinelen Manuel-Reyes

ISBN 978-971-8778-87-6

Published by the College of Agriculture

University of the Philippines Los Baños

College, Laguna, Philippines

Cover photo: A village in Imugan, Sta. Fe, Nueva Vizcaya, Philippines

(Photo courtesy of the UPLB Institute of Agroforestry)

FOREWORD

The Asian Rural Sociology Association (ARSA) was formed in 1992 by a group of Asian who participated in the World Congress of International Rural Sociology Association (IRSA). The formation of ARSA was deemed necessary to cultivate the development of rural sociology as a science; extend the possible application of results of scientific inquiry to the improvement of the quality of rural life; and, exchange and generate meaningful scientific founding for the rural development of Asia.

ARSA regularly holds its International Conferences to provide a forum for its members and other interested individuals to share recent developments in rural sociology, and tackle issues and concerns that revolved around rural sociology in Asia. ARSA has already organized three International Conferences. The 1st International Conference was held in Kasetsart University, Thailand in 1999 with the theme “Globalization and Rural Social Change”. The 2nd International Conference was organized with the theme “Prospects of Asian Rural Sociology for the 21st Century” and was held in Indonesia in 2004. The 3rd International Conference was held in Sanhe, China in 2007 with the theme “Competitiveness and Human Insecurity in Rural Asia”.

For the fourth time, ARSA organized the International Conference on September 7-10, 2010 at the Bicol University, Legapzi City, Philippines with the theme “The Multidimensionality of Economy, Energy and Environmental Crises and their Implications to the Rural Livelihoods”. The 4th International Conference served as a forum to: a) share experiences in implementing innovative rural development programs in response to the energy, economic and environmental crises in Asia; b) discuss the role of rural sociology in the energy, economy and environmental discourses; and, c) discuss the climate change issues and their impacts to the rural livelihoods.

The Conference was organized into plenary/keynote presentation, and parallel/simultaneous paper presentations that revolved around the subthemes, namely: innovative rural development programs in response to energy, economic and environmental crises; locating rural sociology in energy, economic and environmental discourses; and climate change issues and their impacts to rural livelihoods.

The keynote and parallel presentations indicated that the Asian rural society has to deal with social, economic, political and cultural issues brought about by modernization towards the 21st century. While some developed countries in Asia, such as Japan and Korea, have resolved the agrarian-related issues and concerns, their rural societies are now confronted with aging and declining population. These issues bring us to the questioning of the reproducibility of rural society under the project of modernity, on the one hand, and the beginning of a new life under the post-modern period, on the other. Thus, the recent developments now are along the areas of retirement farming, citizen farming, the birth of a producer, among others.

Meanwhile, the other Asian rural societies which have yet to resolve the agrarian-related issues, focused their initiatives towards achieving economic development either through the conventional methods of production and enhancement of market integration, pursuing sustainable development endeavors.

The Asian rural society used to be organized along the many variants of social capital. However, these have diminished because of the transformation or shift from the traditional approach to more modern ways of life. Social capital in its modern variant could be tapped to solve conflicts, prevent a disease, enhance the adoption of sustainable agriculture and organic farming, manage natural resources, and many more. Several papers in this conference dwelled along these areas.

Today, the Asian rural society is confronted with a new set of socially-constructed problems such as climate change, disasters, and natural resources management. Relative to these, we have to understand how our consumptive behavior affects our renewable and non-renewable resources to ensure sustainable development. But at the same time, we begin to reconsider the idea that after all, there are relationships between humanity's actions and natural phenomena. This highlights the blurring of boundaries of the physical, biological and social sciences today. Many papers presented in the 4th International Conference attest to this reality.

We hope that this Conference Proceedings will serve as a vehicle to help build the body of knowledge of rural sociology in Asia. May this also inspire not only the rural sociologists, but also other development-oriented individuals to continue the quest for sustainable development in Asian rural societies.

The Editors

CONTENTS

Page

ANALYSIS OF POLICIES RELATED TO AGRICULTURE, NATURAL RESOURCES MANAGEMENT AND RURAL DEVELOPMENT

Contract Farming as a Tool for Empowering Small-scale Farmers in Malaysia: Perceptions from the Participants and Non-Participants <i>Ratnawati Yuni Suryandari and Amriah Buang</i>	1
The Impact of Free Trade Agreement in ASEAN Using the CEPT Scheme: Comparative Studies in Thailand and Philippines <i>Areerat Todsadee and Hiroshi Kameyana</i>	14
Ecological and Environmental Migration Policy: Its Socioeconomic Impacts to the Ranching Households in Inner Mongolia <i>Zhan Jin</i>	26
Assessing the Solid Waste Management Practices in Bacolod City, Philippines <i>Ma. Teresa B. Ballados</i>	37
Current State of Marine Fishery Resource-Related Ordinances in Selected Marine Protected Areas in Bicol Region, Philippines <i>Fay Lea Patria M. Lauraya, Nestor W. Dullesco and Angelo P. Candelaria</i>	45
Politics of Deliberative Democracy and Water Crisis in Eastern Seaboard of Thailand <i>Surangrut Jumnianpol</i>	60
Living Across Border: The Tactics of Everyday Life Practice of Cambodian-Lao Migrant Worker in Thailand in the Context of Mekong Regionalization of Development <i>Chainarong Sretthachau</i>	67

	Page
RECOGNIZING LOCAL AND INDIGENOUS EFFORTS IN PROMOTING RURAL DEVELOPMENT	
The Role of Traditional Land Use Systems in the Well Being of Rural Timor-Leste <i>Pedro Damião de Sousa Henriques and Vanda Narciso</i>	77
The Roles of Communities in Rural Development: Potentials of Community-Based Approach in Nepal <i>Kazuko Tatsumi and Narendra Mangal Joshi</i>	92
Developing Folk Healer's Database for Creation of Economic Development <i>Wannisa Susom</i>	104
Social Structures Influencing the Prevention of Malaria: A Case of Community-Based Malaria Prevention Project in Modern Yaeyama Islands, Japan <i>Shinako Takahashi</i>	107
Indigenous Management of Water Resources in Bontoc, Mountain Province, Philippines <i>Antonina M. Manochon</i>	118
Networking and Risk Coping Behavior of Poor Households in Central Java, Indonesia <i>Nina Takashino and Jangkung Handoyo</i>	133
The Birth of A Producer in Rural Areas: Their New Role in Maintaining and Rejuvenating Small Towns and Villages in Modern Japanese Rural Society <i>Rieko Tsuru</i>	143
Migration and Livelihood Strategies in Thailand: A Case of Mae Sai Non-Citizen Resident <i>Chanthawong Sasiprapha</i>	148

PARTNERSHIPS AND COLLABORATION TOWARDS IMPROVING RURAL LIVELIHOODS

Prospects and Dilemmas of Working Together for Sustainable Future: Case of the DBP-Forest Program in the Philippines <i>Lutgarda L. Tolentino, Roselyn F. Paelmo, Leila D. Landicho, Catherine C. de Luna and Rowena D. Cabahug</i>	159
Social Capital in Facilitating Community Welfare Development: The Case of Kandang Kolektif in Lombok Islands, Indonesia <i>Rosiady Sayuti, Akhmad Zaini and Moh. Taquiddin</i>	168
Status and Prospects of the Private-Enterprise-Linkage (PEL) Dairy Production in Inner Mongolia, China: A Case of a Dairy Enterprise in Hohhot <i>Yousuke Choumei and Wo Jin Hu</i>	185
The Sustainable Agricultural Development Extension Program (SADEP): Enhancing Health, Education, Livelihood and Protection of the Environment in Occidental Mindoro, Philippines <i>Susanita G. Lumbo, Mary Yole Apple M. Declaro, Lolita L. Bautista, Elmer G. Ruedas and Venessa S. Casanova</i>	196
School-Based Solid Waste Management Initiative: Lessons and Experiences of the Toyota Autoparts and Sta. Rosa City Partnership <i>Enrico U. Baula</i>	205
School and Community Agro-Biodiversity Conservation Initiatives in Davao del Norte, Philippines <i>Mario E. Corado, Marilou N. Runas and Egmedio E. Samillano</i>	215
Self-Fashioning Towards “Apparent Achievement”: A Case of NPO in Mountainous Area in Japan <i>Satoshi Watanabe</i>	226

ALTERNATIVE LAND USE MANAGEMENT AND FARMING SYSTEMS

Rural Revitalization through Retirement Farming in Less-Favored Areas in Japan: The Case of Elderly Farmers in Shikoku, Japan <i>Hitomi Nakamichi</i>	239
Cacao-Based Agroforestry Production in Southern Cameroon: Is It Real or Ideal? <i>Kenta Sakanashi</i>	252

	Page
Historical Development, Present Situation and Prospects of Organic Farming: Examples from Japan and Bangladesh <i>Keiko Yoshino</i>	263
Essential Factors in Promoting Endogenous Development During the Depopulation Era in Less-Favored Areas: Case Study of Sugiyama in Maizuru City, Kyoto, Japan <i>Ryohei Yamashita, Yasuaki Kuki and Satoshi Hoshino</i>	277
Analysis of the Social Conditions Conducive for Sustainable Organic Rice Farming Around Lake Biwa in Japan <i>Makino Atsushi and Yang Ping</i>	284
Can Citizen Farming Change Agriculture and Rural Community? A Case Study in an Urban Neighborhood in Japan <i>Mima Nishiyama</i>	297
 CAPACITY-BUILDING AND CONFLICT MANAGEMENT	
The Constructive Conflict Management Strategy: Lessons from Rural Development Project Naresuan State University and Local Administrative Organization in Thailand <i>Kammales Photikanit and Patcharin Sirasoonthorn</i>	309
Impacts of the Peace-Building Initiatives to Rural Development in Mountain Province, Philippines <i>Annie Grail F. Ekid</i>	325
Empowerment and Capacity-Building of Shallot Farmers in Thailand <i>Yuphin Thuansri, Taweesak Siripornpiboon and Patcharin Sirasoonthorn</i>	339
Quality of Work Life Indicators in Corporate Social Responsibility (CSR) in Electrical and Electronics Private Organization <i>Waraphorn Na Thalang, Piratorn Booyarataphun, Patcharin Sirasoonthorn and Taweesak Sirisoonthorn</i>	349
Promoting Sustainable Agriculture Development and Farmer Empowerment: A Case of Northeast Thailand <i>Sachika Hirokawa</i>	354

STRATEGIES IN RESPONDING TO THE CHANGING ENVIRONMENT, ENERGY AND ECONOMY

- Electric Energy Utilization in the Households of Albay Province, Philippines: Contexts, Conservation Practices and Future Efficiency Strategies 367

Eddie Seva See, Liwayway R. Ables, Melinda D. de Guzman, Joseph Bartolata and Mary Ann M. See

- Overcoming Fuel Crises Using Social Safety Nets: A Case Study of the “Kerosene-LPG Conversion Program” in a Sundanese Village in West Java, Indonesia 380

Arata Mariko

- “E Kontradiksyon”: Cheap Energy for Environment Cost and the Tricky Relationship between the Marinduque Electric Cooperative (Marelco) and Marcopper Mining Corporation 391

Randy Nobleza

- Identifying Environmental Changes in Mt. Data Watershed, Mt. Province, Northern Philippines 402

Ranell Martin Dedicatoria, Carmellita M. Rebancos, Leticia E. Afuang and Ma. Victoria O. Espaldon

- Disaster Management in the High Risk Barangays in Albay Province, Philippines 413

Katherine E. Evasco and Bernardo R. Alejandro IV

IMPACTS OF CLIMATE CHANGE ON THE ENVIRONMENT, AGRICULTURE AND SOCIETY

- Off-Farm and On-Farm-Related Problems and Coping Strategies of the Lowland Rice Farmers in Bay, Laguna, Philippines, After Typhoon Ondoy 425

Nesslie Monsanto and Gloria Luz M. Nelson

- The ‘Salad Bowl’ in Transition: Agriculture and Its Ecological Environment 441

Karen A. Calderon

- Vulnerability Assessment to Environmental Changes of Watershed Area in Sta. Maria, Laguna, Philippines 457

Aurora S. Jose

	Page
The Social Construction of Disaster: Ondoy in the Context of Sagrada Familia and Inquirer.net"	473
<i>Dindo P. Cafe</i>	
 EMERGING TRENDS IN AGRICULTURE, NATURAL RESOURCES MANAGEMENT AND RURAL DEVELOPMENT	
New Trends in the Planning and Maintenance of Countryside Scenery in Japan	493
<i>Hiroyuki Torigoe</i>	
Changes in the Purpose of Organic Farming and the Roles of Newly-Involved Farmers in Japan	520
<i>Koichi Ikegami</i>	
The Development of Farmer-Consumer's Direct Relationship in Japan: Focusing on the Trade of Organic Produce	509
<i>Motoki Akitsy and Namie Aminaka</i>	
Bicol University Community Outreach Strategy: Educating to Build Resilient Communities	521
<i>Fay Leah Patria Lauraya, Leilani D. Pavilando, Joseph L. Bartolato and Maureen B. Mamansag</i>	
Agriculture and Rural Community in a Social and Familial Crises: The Case of Abandoned Rural Community and Invisible People in the Post-War Settlement in Shin-Nopporo, Japan	531
<i>Taisho Nakayama</i>	

Contract Farming as a Mechanism for Agricultural Development in Malaysia: Perceptions from Participants and Non-Participants

Ratnawati Yuni Suryandari¹ and Amriah Buang²

¹Urban Planning Department, University of Indonesia Esa Unggul Jakarta, ²School for Social, Development and Environmental Studies, Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia
nratnawati@yahoo.com

Abstract

The worldwide economic crisis in 1997 hindered the economic development in Malaysia, particularly in terms of domestic food production. In response, Prime Minister Mahathir proclaimed the National Agriculture Policy 3 (1998-2010) to address the concerns of the agriculture sector, which have been neglected in the previous years. In 2003, Prime Minister Abdullah Badawi also introduced the “Agriculture and Trading” as a new element in the agriculture sector. Specifically, the Federal Agriculture Marketing Authority or FAMA (Lembaga Pemasaran Pertanian Persekutuan) introduced Contract Farming program as a mechanism that would assist the farmer entrepreneurs in small scale farming and marketing system. In addition to the National Feedlot Centre and Permanent Food Production Park, the Contract Farming program is one of the High Impact projects of the Ministry of Agriculture and Agro-Based Industry. This paper highlights the results of a study that assessed the perceptions of the participants and non-participants of the FAMA’s Contract Farming. The study was conducted in North Peninsula Malaysia in early 2009 covering 207 respondents.

Background

To regain its economic development, which was greatly affected by the 1997 worldwide economic crisis, Malaysia’s Prime Minister Mahathir proclaimed the National Agriculture Policy 3 (1998-2010). This policy primarily aims to boost agricultural production in the country. Specifically, this policy seeks to increase food production, attain new growth goals in agriculture sector, build linkages with other sectors, and increase the competitiveness of the agriculture sector (Amriah, 2007).

Consistent with the National Agriculture Policy 3, Prime Minister Abdullah Badawi introduced the concept of “Agriculture is Trade” among the farmers in 2003. The new era of agriculture is characterized as commercial and modern – applying high technologies, information technology and biotechnology. The current National Policy 3 also specifies agriculture as the third component of economic growth in Malaysia, besides manufacture and services (Harizamrry, 2009).

The FAMA Contract Farming, one of the high impact projects of the Ministry of Agriculture and Agro-Based Industry, was introduced to help increase food production and sustain economic growth in Malaysia. The government of Malaysia regards

Contract Farming as imperative to the development of the national agriculture sector (Dato' And. Rahim H. Ahmad, 2006). As such, the government started to design the code of Contract Farming (Utusan Malaysia, 2006).

FAMA Contract Farming is seen as a mechanism to help the small-scale agriculture entrepreneurs. Specifically, Contract Farming aims to: a) guarantee marketing of agricultural products to be able to increase the farmer's income; b) increase vegetable and fruit production through systematic production and marketing plans; c) establish good quality and stable agricultural products; d) adapt to the market requirements; and, d) enhance technology transfer (Kementrian Pertanian dan Industri Asas Tani Malaysia, 2009). Relatively, Contract Farming is a new concept among the Malay small farmers. Most of them were doubtful that this mechanism would improve their agricultural production (Amriah, 2001; 2007).

To assess the perceptions of the farmers about Contract Farming, a study was conducted in the north zone of Malaysian Peninsula in 2009. This paper highlights the results of the said study, and attempts to elaborate the implications of the respondents' assessments about the Contract Farming project in Malaysia.

Research Methodology

This study involved 207 Malay small farmers who have participated in Contract Farming project. The primary data (e.g. farmers' perceptions and comments on contract farming; problems being encountered, etc) were gathered using a structured questionnaire and key informant interviews. The study was conducted in Kedah, Perlis, Perak and Pulau Pinang in North Zone of Malaysian Peninsula (Figure 1). The North Zone is further categorized into two areas, the farmland of the Malay farmers, and the industrial areas.

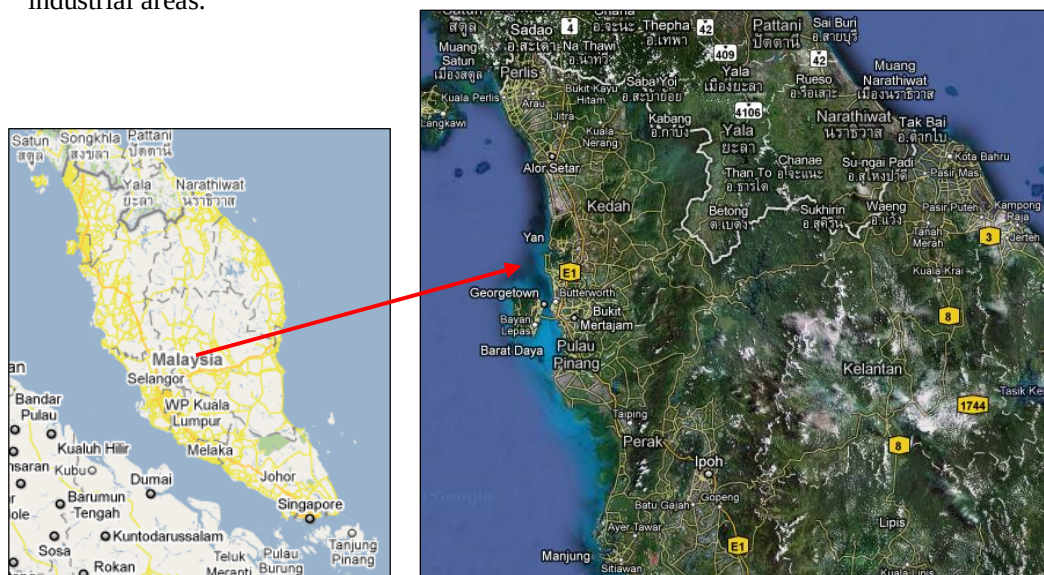


Figure 1. The study area

Results and Discussion

General characteristics of the respondents

As presented in Table 1, most of the respondents (68.60%) were from Kedah, followed by those from Pulau Pinang (16.91%), Perlis (8.21%) and Perak Utara (6.28%). Most respondents (97.10%) were men, while the rest (2.90%) were women (Table 2).

Table 1. Distribution of respondents by state.

State	Number	Percentage
Kedah	142	68.60
Pulau Pinang	35	16.91
Perlis	17	8.21
Perak Utara	13	6.28
Total	207	100.00

Tables 2. Distribution of respondents by gender.

Gender	Number	Percentage
Male	201	97.10
Female	6	2.90
Total	207	100.00

Most respondents (97.10%) were Malays, and some were Chinese (2.42%) and Indians (0.48%) (Table 3). As presented in Table 4, the respondents had an age range of 21 to 60 years old. Most of them (35.75%) were more than 50 years old. Some respondents (11.59%) were 21 to 30 years old. This finding shows that basically, the participants of Contract Farming were elderly, which, of course, influences, the productivity of the contract farming project.

Table 3. Distribution of respondents by ethnic groups.

Ethnic group	Number	Percentage (%)
Malay	201	97.10
Chinese	5	2.42
India	1	0.48
Total	207	100.00

Table 4. Distribution of respondents by age.

No.	Age	Number	Percentage (%)
1	< 21	0	0.00
2	21 – 30	24	11.59
3	31 – 40	46	22.22
4	41 – 50	63	30.43
5	51 – 60	48	23.19
6	> 60	26	12.56
	Total	207	100.00

Achievements of the farmer-participants of contract farming project

As shown in Table 5, most respondents (48.31%) who participated in the Contract Farming project had only about one-hectare farmland, and the rest (8.22%) farmed for about more than five hectares. Most of the respondents who participated in the Contract Farming in group had about one to three hectares of farmland. These farmlands, in general were being rented from the state/government, although there were some participants who cultivate in their own farmlands.

The objective of FAMA is to manage about 40,000 hectare farmlands for the Contract Farming project, and mobilize 22,000 participants in Rancangan Malaysia Kesembilan (Malaysian Development Plan/RMK-9). The program covered 16 vegetable species and 13 fruit species, as shown in Tables 6 and 7 (Mohd. Ashraf: 2009). Meanwhile, Table 8 indicates that most project participants (29.95%) planted rambutan, while 20.77% respondents chose mango chok, and 14.98% banana. Only a few farmers planted vegetables (chili, corn, cucumber) and other fruits (pineapple, papaya, jackfruit).

Table 5. Farm size cultivated by the Contract Farming participants (in hectare).

Area (hectare)	Frequency (n=207)	Percentage (%)
0.00 – 1.00	100	48.31
1.01 – 2.00	28	13.53
2.01 – 3.00	52	25.12
3.01 – 4.00	5	2.42
4.01 – 5.00	5	2.42
5.01 – 6.00	2	0.97
6.01 – 7.00	2	0.97
7.01 – 8.00	0	0.00
8.01 – 9.00	1	0.48
9.01 – 10.00	3	1.45
> 10.00	9	4.35
Total	207	100.00

Table 6. Potential vegetable commodities for the contract farming project.

Vegetables	Specifications
Bendi	Green (5 angles), White (7 angles), 989
Chili	Kulai, Batu Pahat, Minyak, Korean Hot (hybrid) (under rain and insect shelter)
Old Ginger	Bentong
Sweet Corn	F1 522, 969
Broad Bean	White Flower/white
String Bean	388, 328
Sweet potato	VitAto, certain farm
Cabbage	KY Cross (highland), Tropicana
Sweet Pumpkin	Taiwan 767
Petola	certain farm, F1 (Thailand-green/white)
Roselle	UM-UKL 1
Brinjal	302, 312, 1540
Cucumber	118, 980
Tomato	Holand: 1039, 322, 263, Denmark 163, Baccarat (fertigation system)
Cassava	yellow, white, Sri Pontian
Citronella	Chicken thigh

Source: Mohd Ashraf, 2009

Table 7. 13 Potential fruit commodities for the contract farming project.

Fruits	Specification
Star Fruit	B 10, B 17
Papaya	Ecsotic, Sekaki/Hong Kong, Subang/Batu
Mata Naga/Dragon	Red Seed, White Seed
Fruit/Pitaya	
Durian	D 24, D 101
Stone Guava	Thai Without Seed, Kampucea GU 8, Klom Toon Klao GU 9, Klom Sali GU 10
Citron	Honey, Bali KK2/Melonmas, Bali PO 51/Sha Ting, Bali PO 52/Chubby
Mango	Chokanan, Harumanis
Mangosteen	-
Pineapple	Morris, Josaphine, N 36, Gandul
Jack Fruit	J 31/NS 1, J 29
Banana	Berangan, Mas, Cavendish, Tanduk, Rastali
Rambutan	Anak Sekolah, Deli
Watermelon	Red without Seed, Fragrant, Golden Langkawi

Source: Mohd Ashraf, 2009

Table 8. Crops being cultivated by the participants of the Contract Farming project.

Crops	Frequency (n=207)	Percentage (%)
Vegetables:		
Corn	24	11.59
Vegetables (broad bean, string bean)	9	4.35
Cucumber	6	2.90
Chili (fertigation)	5	2.42
Roselle	3	1.45
Bendi	3	1.45
Fruits:		
Mango chok	43	20.77
Banana berangan	31	14.98
Pineapple morris	6	2.90
Papaya	6	2.90
Honey Jackfruit	6	2.90
Dragon fruit (organic)	1	0.48
Watermelon	2	0.96
Rambutan	62	29.95
Total	207	100.00

As indicated in Table 9, most respondents (33.33%) preferred mango, rambutan and jackfruit, because these were actually their major crops even before joining the project. Hence, they had no difficulty participating in the contract farming project because same crops are being prescribed by the project. Meanwhile, 16.43% respondents preferred chili, pitaya, and roselle because these were perceived as high value crops. About 12% respondents chose mango because of its suitability to the climatic conditions in their areas. However, few respondents perceived that there is a quick capital return, simple storage requirements, and based on the suggestions or advice of the Pertubuhan Peladang Kawasan/Association of Farmer of District.

Table 9. Reasons for the respondents' crop preference in contract farming project.

Reason	Frequency (n=207)	Percentage (%)
Quick capital returns	19	9.18
Storage of crop is simple	16	7.73
High value crop	34	16.43
Being suggested by PPK, and are sampling and experiment plant	9	4.35
Being suggested by Agriculture Department	9	4.35
Have been cultivated in their farms	69	33.33
The crop is suitable to the climate	24	11.59
Based on the demands from big traders and retail shops	9	4.35
Based on FAMA's market choice	5	2.42
Being permitted to diversify the plant	4	1.93
Just to have a try	3	1.45
High return	1	0.48
As new source of income	1	0.48
Based on the respondents' interest	1	0.48
Widespread marketing opportunity	1	0.48
No answer (failed to participate in project)	2	0.97
Total	207	100.00

As shown in Table 10, most respondents (65.70%) have actively participated in the Contract Farming project. They always sell their crops to FAMA as one of the project agreements. About 18% respondents participated in Contract Farming project passively, and there were still 11.11% who had already stopped their participation to the project. About 5.31% respondents reported to have participated in the contract farming, but their project failed.

Table 10. Extent of participation to the Contract Farming project.

Extent of Participation in Contract Farming project	Frequency (n=207)	Percentage (%)
Participating in Contract Farming project (actively)	136	65.70
Participating in Contract Farming project (passively)	37	17.87
Stopped participating in Contract Farming project	23	11.11
Failed participating in Contract Farming project	11	5.31
Total	207	100.00

Most respondents (83.82%) have been actively participating in the contract farming project because of the assured market for the crops, while 12.50% stated that payment is assured when they market their products to FAMA. Unfortunately, however, FAMA bought their crops at lower prices than the prevailing market price. But it did not hinder them to actively participate in the project. According to them, selling their crops to FAMA means an assured market and payment (Table 11).

Table 11. Respondents' reasons to actively participate in Contract Farming project.

Reasons	Frequency	Percentage (%)
Assured market for the crops	114	83.82
FAMA secure the marketing and the payment even though in lower price	17	12.50
FAMA determine the price according to the current market price	5	3.68
Total	136	100.00

Respondents who have passively participated in the project stated that the price determined by FAMA was lower than the market price. Therefore, the respondents preferred to sell their crops to other merchants, directly to the market. Usually, FAMA buys their crops at the price of 20 or 30 cents lower than the prevailing market price. But, their products are bought in large quantities.

Some respondents also mentioned that the quantity and quality of their crops could not pass the standards/requirements of FAMA. They said their crops are not of good quality because most of these are damaged by pests and diseases. They also stated that FAMA payment was overdue, and thus, they sold their crop themselves to other merchants at a higher price than FAMA price. There were other respondents who mentioned that FAMA could not buy their crop amounting to RM 30,000, because FAMA could only buy products at RM 1,000. These factors influenced some

respondents to sell their products directly to the markets and traders instead to FAMA (Amriah & Suryandari, 2009).

Meanwhile, 11.11% respondents stopped to participate in the Contract Farming project. Because of uncontrollable factors such as pests and diseases, and flooding, the crop yield declined. Hence, they planted other crops which are not prescribed by FAMA. The respondents also mentioned that some crops from Thailand have usually lower prices than their products. As such, FAMA usually buys their crops/produce at a lower price.

Table 10 also shows that a few participants (5.31%) have been unsuccessful in their contract farming project. Apparently, their farms have not been managed and maintained well, as most of their crops were attacked by pests and diseases. In addition, these participants failed to avail of the capital loan from FAMA. They were not also allowed to rent large areas of the Country Empire, and thus, the group of cooperators was not able to implement the project.

Table 12 indicates that most respondents (48.31%) were satisfied on their participation to the Contract Farming FAMA project. However, about 39% of them were dissatisfied, while 12% did not provide their answers.

Table 12. Respondents' level of satisfaction about the Contract Farming project

Level of satisfaction	Frequency (n=207)	Percentage (%)
Satisfied	100	48.31
Not/less Satisfied	81	39.13
No answer (failed to participate in project/never sell crop to FAMA)	25	12.08
So-so	1	0.48
Total	207	100.00

As shown in Table 13, most (61.00%) of the respondents who have expressed their satisfaction on the contract farming project argued that it does not matter if their crop was bought by FAMA in lower price. For them, it is more important to have an assured market for their products. Respondents also mentioned that FAMA buy their crops even during lean season (17.00%). There were 12% respondents who stated that purchasing price determined by FAMA was consistent with the valid market price.

Table 13. Reasons why the participants are satisfied with the contract farming project.

Reasons	Frequency	Percentage (%)
The FAMA purchasing price was according to valid market price	12	12
In heap occasion, FAMA guaranteed to buy respondents crop	17	17.00
There is an assured market for the crops/produce	61	61.00
The price determined by FAMA was according to market price, and FAMA bought the crop in any quality	2	2.00
All institutions (FAMA, PPK, MARDI, Agricultural Service) were invited	2	2.00
FAMA always visit the farm and provide technical advice	1	1.00
FAMA still buys the crops even if these are not of good quality	1	1.00
Not as the trader did, FAMA stabilized the price	1	1.00
No answer	3	3.00
Total	100	100.00

Most respondents (40.74%) who were not satisfied with the Contract Farming project argued that FAMA's purchasing price is always lower than the prevailing market prices. Meanwhile, some respondents (33.33%) stated that FAMA's contract with the participants would only be valid when the crop becomes available. Thus, they were forced to agree with the prices as prescribed by the FAMA. These respondents perceived that with such arrangements, the contract farming project would not improve or increase their farm income, because of the increasing farm expenses. Some of them also raised that the quality and quantity of their produce do not match with the requirements of FAMA. Finally, the respondents' crops/produce have to compete with the crops imported from Thailand, the price of the latter is usually cheaper than the former. Thus, to ensure the disposal of their produce, FAMA usually buy the participants' produce at a much lower price (Table 14).

Table 14. Reasons why some respondents were dissatisfied with their participation to the FAMA contract farming project.

Reasons	Frequency	Percentage (%)
FAMA purchasing price was always low (fixed), while retail price fluctuated	33	40.74
Farmers seems to be trapped by FAMA, contract after the fruits appears, respondents have to accord with FAMA that sets a low price, meanwhile production cost increase.	27	33.33
FAMA does not buy fruits with quality under its standard	3	3.70
Fields are not fertile	2	2.47
FAMA cannot buy all products of the respondents farmers	1	1.23
FAMA does not provide loans	1	1.23
Not in accord with the initial agreement	1	1.23
FAMA insensitive with market price	1	1.23
FAMA does not purchase all products of different grades of quality	1	1.23
Fruits sometimes disrupted by wild boars or monkeys	1	1.23
FAMA does not pay attention to the aspects of quality of the products	1	1.23
The price of fruits decrease due to the competition in market with fruit product from Thailand	1	1.23
In disagreement with FAMA about quality grading	1	1.23
FAMA is acting like a broker	1	1.23
No answer	6	7.41
Total	81	100.00

Table 15 presents the problems that are being encountered by the respondents in the contract farming project. The foremost problem of the respondents is the low purchasing price of their crops/produce (43.96%). Their contract with FAMA becomes effective when the crops have been harvested and are available for marketing to FAMA. The purchasing price is not also stipulated in the contract. Thus, the participants are forced to agree with the purchasing price of the FAMA, which is usually lower than the prevailing market price. About 10.63% of the respondents mentioned that they have very small incentives from the government (7 cent/kg), compared to the fishermen who get an incentive of 20 cents/kg and an oil subsidy. The pests and diseases are also a major problem of a few respondents (8.96%). These affect the yield and the quality of their crops/produce. Other problems mentioned are the increasing expenses in farm inputs such as seed and pesticides (7.25%)

Table 15. Problems encountered by the participants of the contract farming project.

Problems	Frequency (n=207)	Percentage (%)
Purchasing price by FAMA is cheaper, farmers felt being trapped by FAMA because of the effectivity of the contract farmers are forced to agree with the FAMA's purchasing price.	91	43.96
Incentive from the government is small (7 cents/kg); no oil subsidy compared with the fishermen who get an incentive from the government (7 cents/kg) and oil subsidy.	22	10.63
Fruits are affected by pests and diseases	18	8.96
Production cost is increasing sharply	15	7.25
No problem	12	5.80
Fruits is disrupted by wild boars and monkeys	10	4.83
FAMA is worse than a broker because it takes profits from the participating farmers by selling the products to whole sellers in a cheaper price	10	4.83
FAMA does not buy all products of the participating farmers (only fruits with grade A and B)	8	3.87
There is a competition with fruits products from Thailand	4	1.93
Not answer (fail to participate in the project)	3	1.45
FAMA does not buy products under grades in quality	2	0.97
There are problems in the new scheme of land use: pest and lack of water	2	0.97
There are climate problems (rain and flood)	2	0.97
Late payment by FAMA	2	0.97
FAMA can not fulfill loan requested by farmers	2	0.97
Farmers feel to be in losses because FAMA does not consider to the quality of crops	1	0.48
Problem in preservation crops	1	0.48
Local youths are less interested in agriculture	1	0.48
No agreement between the farmers and FAMA on grades of quality of the products	1	0.48
Total	207	100.00

Comments and assessment of the local farmer communities on the contract farming project

A total of 200 farmers (100 from Area Langkawi (Kedah) and 100 from Barat Daya District (Pulau Pinang), were asked about their comments and assessment about the contract farming project. All of these respondents have already heard about the contract farming project. Most of them (38%) have learned about the project from the television. About 76% respondents knew that there is a guaranteed marketing with FAMA. While 59.5% of the respondents were eager to become part of the said project, their age and health conditions were among their constraints.

Meanwhile, most of the respondents (49%) were also apprehensive about the arrangements with the contract farming project. They have come to know that the purchasing price of FAMA on the produce of the project participants is quite low. This would not increase the income of the farmers because of the increasing cost of farm inputs. They have also learned from the project participants that their contract and arrangements with FAMA are quite complicated, which led to the project failure on some participants. With this, most of the respondents (65%) did not have any regrets for not participating in the contract farming project. They argued that they could sell their produce/crops to the market by themselves.

Summary and Conclusion

Most of the respondents (65.70%) participated in the contract farming project with FAMA to ensure that their produce/crops will have an assured market regardless of the low purchasing price of the latter.

There were also respondents, however, who were not complacent about the contract farming project because of the low purchasing price of FAMA, complicated arrangements in the contract, and the increasing farm expenses.

Based on comments and assessment of other non-participant local farmers, they have no regrets of not participating in the contract farming project because of their perception that this project would not improve their farm income.

These research findings, therefore, provide a basis to conclude that the contract farming project of FAMA, in general, is not a workable scheme to improve the farm productivity and income of the Malay small farmers.

References

- Amriah Buang. 2001. Explaining farmers' wellbeing-An exercise in comparative approaches. Kuala Lumpur: Univision Press.
- Amriah Buang. 2007. Pertanian kecil Melayu dan kelestariannya. Bangi: Penerbit UKM.
- Amriah Buang and Suryandari, R.Y. 2009. Pertanian Kontrak sebagai satu kaedah memajukan petani kecil Melayu – dapatan awal dari Zon Utara Semenanjung Malaysia. Prosiding Seminar UNHAS-UKM “SERUMPUN IV”, di Universiti Kebangsaan Malaysia, 4-5 July.
- Dato' Abd. Rahim bin Haji Ahmad. 2006. Agricultural cooperatives in Malaysia: Innovations and opportunities in the process of transition towards the 21st century model. Paper presented in the 2006 FFTC-NACF International Seminar on Agricultural Cooperatives in Asia: Innovations and Opportunities in the 21st Century. Seoul, Korea, 11-15 September.
- Harizamrry. 2009. Abdullah dan Jeanne berkongsi gembira di kebun. <http://harizamrry.wordpress.com> (25 August 2009).
- Kementerian Pertanian dan Industri Asas Tani Malaysia. 2008. Projek impak tinggi. http://www.moa.gov.my/projek_impak_tinggi (20 December 2008).
- Mohd Ashraf. 2009. Program Ladang Kontrak FAMA. <http://mohdashraf.com/v1/pertanian/program-ladang-kontrak-fama/> (13 May 2009).
- Suryandari, R.Y. dan Amriah Buang. 2009. Pertanian Kontrak sebagai satu kaedah memajukan petani kecil Melayu - tanggapan dan penilaian komuniti tani tempatan terhadap program Pertanian Kontrak di Zon Utara Semenanjung Malaysia. Prosiding Seminar Kebudayaan Indonesia-Malaysia (SKIM XI), di Universiti Padjajaran Bandung, 10-12 November.
- Utusan Malaysia. 2006. 5 projek berimpak tinggi dirangka. 1 August.

The Impact of Free Trade Agreements in ASEAN Using the CEPT Scheme: Comparative Study of Thailand and the Philippines

Areerat Todsadee^a

Hiroshi Kameyama^b

^aGraduate School of Agriculture, Kagawa University

^bFaculty of Agriculture, Kagawa University, Japan

todsadee@hotmail.com

Abstract

Recently, the Free Trade Agreement (FTA) networking in East Asia has been expanding. It has been developing with ASEAN as its hub. Furthermore, ASEAN itself has attempted to strengthen the integration by signing the ASEAN Trade in Goods Agreement (ATIGA) in 2008/2009 and by establishing ASEAN Economic Community (AEC) targeted in 2015.

To assess the economic impact of FTAs, the comparative results of a simulation for Thailand and the Philippines are presented in this paper, using computable general equilibrium (CGE) model analysis. We used the global trade analysis project (GTAP) model with database version 7. The reference year corresponds to the global economy in 2004. Assuming the tariff reduction process as Common Effective Preferential Tariff (CEPT), some indexes such as GDP, term of trade (TOT), equivalent variation (EV) and allocative efficiency are shown. Thailand and the Philippines are both original members of ASEAN. The agricultural sector in both countries is still contributing a large share, but the performance for industrial change has not been the same. This paper analyzes the extent by which both countries can improve benefit of FTAs by reducing or eliminating tariffs on all products and on non-agricultural products under a CEPT scheme. Some changes are examined by linking overall welfare decomposition and industrial structure by sectors.

Keywords: Free Trade Agreements; ASEAN; CEPT; GTAP; CGE

Introduction

The proliferation of free trade agreements (FTAs) has been one of most notable phenomena in the world economy over the past 15 years. FTAs have become the dominant form of international cooperation on trade policy for virtually all members of the World Trade Organization (WTO), with the exception of Mongolia. The number of FTAs that has been notified to WTO tripled from around 124 in 1994 to 370 by August 2008, more than half of which are currently in force. Interestingly, half of them are in the Asia Pacific region, the center of global trade dynamism, which has far-reaching implications, not only for the philosophy and operation of the multilateral trading system, but also for the day-to-day conduct of cross-border trade.

In general, FTAs involve liberalizing trade among the member-countries. However, their actual impact on trade is not as straightforward as we usually expect from multilateral and/ or unilateral liberalization. In fact, in the 1990s when the WTO was being established with the subsequent reinforcement, the Asia-Pacific Cooperation (APEC), ASEAN Free Trade Area (AFTA) (Adams and Park 1995, Kawasaki 2003, Indira and Mangunsong 2006, Siriwardana 2007, Siriwardana and Yang 2008, Kohpaiboon 2009), and South Asian Free Trade Area (SAFTA) were activated (Moktan 2008).

AFTA was selected for this study because it is one of the few South-South FTAs in which tariff reduction programs were completed by 2003, and thus, sufficient time has passed to assess their impacts. The ASEAN member governments have responded to the joint CEPT scheme. The findings of this study would be directly relevant to this policy debate.

Thailand and the Philippines are suitable cases of this study for two reasons. First, Thailand and the Philippines are original members of AFTA. Second, the Philippines is a newly-industrialized nation while Thailand has already been an industrialized nation. However, they both still have economies with large agricultural sectors. The non-agricultural sectors follow the ASEAN agreement to create a common market by reducing or eliminating tariffs under a Common Effective Preferential Tariff (CEPT) scheme. This paper aims to evaluate the economic impact and welfare implications of trade liberalization on CEPT scheme in Thailand and the Philippines.

Methodology

To analyze the economy-wide impact of trade liberalization, a CGE model of global trade was employed for model simulations. A CGE model numerically simulates the general equilibrium structure of the economy, and is used for the analysis of Free Trade Agreements (FTAs). It is built on the Walrasian general equilibrium system, in which the central idea is that market demand equals supply for all commodities at a set of relative prices. Moreover, a CGE model has solid micro-foundations that are theoretically transparent. Functional forms are specified in an explicit manner, and interdependencies and feedback are incorporated. Therefore, the model is an effective framework for assessing the effect of policy and structural changes on resource allocation by clarifying “who gains and who loses”.

These characteristics differentiate it from the partial equilibrium model, which is not economy-wide, the macroeconomic model, which is not multisectoral, and input-output model, in which economic agents do not respond to changes in prices. Moreover, the multi-country model is required to analyze international economic affairs such as trade and investment policies, which affect not just one but a number of economies.

Other database and the standard version of model by the Global Trade Analysis Project (GTAP) are utilized as a basis of simulation experiments. The GTAP¹ model is a standard CGE model, which depicts the behavior of household, governments and global sectors across each economy in the world. It is composed of regional models, which are linked through international trade. Prices and quantities are simultaneously determined in factor and commodity markets by accounting relationships, and by the structure of international trade. The model includes three main factors of production: labor, capital and land. Land and capital are used by all industries, but land is used only in agricultural sectors. Capital and intermediate input are trade, while labor and land are not traded between regions.

Several key assumptions for the standard GTAP model are as follows. First, there is perfect competition, and therefore there is a constant return to scale. Second, there is the presence of the imperfect substitution in goods and services between the home economy and those abroad and among different origins of economies, following the Armington parameter². Third, the amount of total labor-one factor endowment-is fixed. This means that the model assumes full employment and no unemployment. The amount of total capital is also fixed in the standard GTAP model.

Data and Aggregation

The source of the data for simulation is GTAP version 7. It covers 113 regions, 57 commodities or sectors, and five primary sectors. The database corresponds to the world economy based on 2004 benchmark.

The original GTAP dataset was aggregated down to 9 regions and 14 sectors, respectively (AFTA regions: Indonesia, Malaysia, Singapore, Thailand, the Philippines, Vietnam, Laos PDR, Myanmar and Cambodia, 14 sectors: agriculture and food, fishery and forestry, mining, wood and paper, mineral products, textile and apparel, electronic machinery, transport equipment, other manufacturing, construction, trade, transport and communication, public services and other services).

¹ The GTAP model was applied to the analysis of the economic impact of the Uruguay Round Agreement by the Secretariat of the General Agreement on Tariff and Trade (GATT) for that day as seen in GATT (1994). And later in 1997, it was also utilized in the assessment of the economic impact of the Manila Action Plan by the APEC Economic Committee. At present, this model and database are widely used by international organizations and researchers on international affairs. Hertel (1997) describes the GTAP.

² The basic framework of the trade model is guided by the comparative advantage theory by Heckscher-Ohlin. However, the original theory of comparative advantage cannot explain such aspects as the two-way trade seen in actual trading behavior. This is because the theory makes no distinctions between the same goods from different areas of production. Therefore, the general equilibrium model introduces heterogeneity into the same goods according to their production areas, namely, imperfect substitutes of goods between home and abroad, the so-called Armington assumption (Armington 1969).

Table1. Average CEPT rates by countries in AFTA in 1993-2010 (in percent).

	Brunei	Indonesia	Malaysia	Philippines	Singapore	Thailand	ASEAN	Vietnam	Lao	Myanmar	ASEAN 10
1993	3.78	17.27	10.79	12.45	0.01	19.85	11.44				
1994	2.64	17.27	10.00	11.37	0.01	19.84	10.97				
1995	2.54	15.22	9.21	10.45	0.01	18.16	10.00				
1996	2.02	10.39	4.56	9.55	0.01	14.21	7.15	0.92			7.03
1997	1.61	8.53	4.12	9.22	0	12.91	6.38	4.59			6.32
1998	1.37	7.06	3.46	7.22	0	10.24	5.22	3.95	5.00	2.39	4.91
1999	1.55	5.36	3.2	7.34	0	9.58	4.79	7.11	7.54	4.45	5.01
2000	1.26	4.76	3.32	5.18	0	6.12	3.64	7.25	7.07	4.43	4.43
2001	1.17	4.27	2.71	4.48	0	5.67	3.22	6.75	7.08	4.57	4.11
2002	0.96	3.69	2.62	4.13	0	4.97	2.89	6.92	6.72	4.72	3.84
2003	1.04	2.17	1.95	3.82	0	4.63	2.39	6.43	5.86	4.61	3.33
2004	0.89	1.86	1.67	3.27	0	3.97	0.66	5.51	5.02	3.95	2.07
2005	0.76	1.59	1.43	2.81	0	3.40	0.57	4.72	4.31	3.39	1.77
2006	0.65	1.37	1.23	2.41	0	2.92	0.49	4.05	3.69	2.90	1.52
2007	0.56	1.17	1.05	2.06	0	2.50	0.42	3.47	3.16	2.49	1.30
2008	0.48	1.00	0.9	1.77	0	2.14	0.36	2.97	2.71	2.13	1.12
2009	0.41	0.86	0.77	1.51	0	1.84	0.31	2.55	2.32	1.83	0.96
2010	0	0	0	0	0	0	0	0	0	0	0

Source: For 1993 to 2003 by ASEAN Secretariat (1998, 2002, 2005)

Note: For 2004 to 2010 by authors' calculation by linear interpolation.

We separated the individual country/region to the maximum extent possible so as to distinguish the welfare and trade effect of policy changes by country/region and sectors based on similarities in factor shares and characteristics. The regional analysis focuses on Thailand and the Philippines.

Simulation procedure and policy scenarios

Our simulation procedure takes into account the membership in intra-AFTA from 2004 to 2010. It is not a one time shock, so it should be done by using dynamic GTAP fundamentally. As in our preliminary study, we used the following steps. We eliminated the tariff in AFTA members in the first year and saved it. Then, we used it as the base data in the second year and repeated the same steps until the end recursively. This is a comparative-static model that could be used to analyze the reactions of the economy at a specific time point.

Our analysis places a special focus on the reduction of average CEPT rates in AFTA countries, before and after the CEPT scheme established. Table 1 provides an overview of the average CEPT tariff rates from 1993-2010 in the ASEAN6 and ASEAN 10 countries. In Thailand, the tariff level was relatively high compared with the Philippines.

We carried out two simulations. These two simulation scenarios may reflect the options that were discussed by the two parties at different stages of negotiations.

Scenario 1: all bilateral tariffs in Thailand and the Philippines, all tariff rates that appear in Table1 will be reduced to zero.

Scenario 2: non-agricultural sectors in Thailand and the Philippines.

Simulation Results

This section reports the results from the GTAP simulation of AFTA particularly the macroeconomic effect, trade performance, welfare decomposition and total trade bilateral export from Thailand.

The Macroeconomic Impact

The simulation outcome on the macroeconomic impact of the AFTA is shown in Table 2. The economic growth in Thailand and the Philippines are shown loser, trading with old member of AFTA in both scenarios. This finding indicates that the AFTA has a negative impact on both countries, especially in the case of the Philippines. However, the imports from the ASEAN countries increased more steadily than exports, import excess export in both countries. On the other hand, as far as exports are concerned, the Philippines has more exports than Thailand in non-agricultural sectors. Thailand's exports are generally deteriorating with ASEAN countries. The rate of change in terms of trade in both countries deteriorated which could be explained by the less capacity to import, especially in Thailand.

Table 2. Macroeconomic impact in Thailand and Philippines (in percent).

Scenario 1							
Thailand	2004	2005	2006	2007	2008	2009	2010
real GDP	-0.03	-0.03	0.04	0.00	0.00	0.00	0.02
import volume	2.16	2.25	-0.66	0.26	0.07	0.25	1.73
export volume	0.12	0.11	-0.01	-0.03	-0.04	-0.03	-0.28
trade balance	-0.02	-0.02	0.01	-0.00	-0.00	-0.00	-0.02
terms of trade	0.20	0.20	0.00	0.10	0.04	0.05	0.40
Philippines							
real GDP	-0.02	-0.00	0.11	-0.00	0.00	-0.00	-0.01
import volume	0.31	0.05	-0.05	0.13	-0.01	0.12	0.77
export volume	0.08	0.02	0.26	0.05	0.00	0.05	0.32
trade balance	-0.00	-0.00	0.00	-0.00	0.00	-0.00	-0.00
terms of trade	0.18	0.01	-0.20	0.03	-0.00	0.03	0.19
Scenario 2							
Thailand	2004	2005	2006	2007	2008	2009	2010
real GDP	-0.04	-0.00	0.04	0.00	0.00	0.01	0.02
import volume	1.45	0.09	-0.64	0.25	0.04	0.11	1.79
export volume	-0.08	-0.01	-0.00	-0.03	-0.03	-0.03	-0.27
trade balance	-0.01	-0.00	0.01	-0.00	-0.00	-0.00	-0.02
terms of trade	0.12	0.02	-0.03	0.05	0.02	0.04	0.36
Philippines							
real GDP	-0.01	-0.00	0.00	0.00	-0.00	0.00	-0.01
import volume	0.15	0.04	-0.55	0.11	-0.01	0.11	0.67
export volume	0.09	0.02	-0.20	0.04	0.00	0.04	0.24
trade balance	-0.00	-0.00	0.00	-0.00	0.00	-0.00	-0.00
terms of trade	-0.02	0.01	-0.15	0.03	-0.00	0.03	0.18

Source: GTAP simulation

Finally, the term of trade (TOT) has improved in Thailand because the consumers pay less money for the imported products. That is, it has to give up fewer exports for the import it receives. But Thailand's consumers pay money much when Vietnam joined in 2004 in both scenarios, whereas the Philippines' TOT deteriorated because of the social welfare in both sectors. This means that, in all commodity sectors, the Philippines' consumers pay much money for the imported products and non-agricultural sector as well, when the new members came in, Vietnam in 2006 and Laos and Myanmar in 2008 and also on non-agricultural sector as well.

Trade performance results of the FTAs

The projection of the equivalent variation (EV) is a measure of the welfare impact of the FTAs. The EV is an absolute monetary measure of change in welfare in terms of income that eventuates from the fall in import prices when tariffs are eliminated. The EV estimates follow the same pattern of change in real GDP. The change in real consumption which is regarded as an alternative measure of welfare outcome also confirms this finding (Table 3).

As a result, Thailand is shown to gain in improvements in welfare which can be attributed to the gains from trade creation in both scenarios--all commodities and non-agricultural sectors.

However, the comparative analysis of the benefit to welfare in both scenarios shows that, in scenario 2 the Philippines welfare loss by EV in the first year 2004, is -16.79 US million \$. It is quite a large drop down and accounts for (- 49.9 %) of total EV in 2004 - 2010. Accordingly, the CEPT scheme had a new membership in 2006 – 2010. Thailand lost welfare more than original member countries except in 2010. When nine countries joined and tariffs are eliminated, Thailand increased its welfare.

The Philippines lost welfare in both sectors in both scenarios. Especially when a new member, Vietnam spreads in the range of 9.29 and 72.49, in 2006. However, the negative EV in the Philippines on both scenarios means that they need to be compensated at the original prices to have the same level on consumer welfare as the price falls.

Welfare decomposition

The decomposition of the welfare measured in terms of changes in the equivalent variation (EV) to the ASEAN countries among Thailand, the Philippines and AFTA countries is shown in (Table 4). As a result, Thailand has gained in terms of trade effects by reciprocal trade liberalization with ASEAN countries while the Philippines has incurred losses. On the other hand, Thailand lost benefits when new member, particularly Vietnam, joined the CEPT scheme, in both scenarios - all commodities and non-agricultural sectors in 2006.

The effect of allocative efficiency shows a greater loss in the Philippines than Thailand, especially in Scenario 2. In comparison to those terms of trade effects with other sources of welfare impacts, it is also shown that Thailand will gain largely more than the Philippines in terms of trade effects.

Table 3. Trade performance results in Thailand and Philippines.

Scenario 1							
Thailand	2004	2005	2006	2007	2008	2009	2010
EV (\$US Million)	200.2	239.3	18.6	65.4	54.9	61.1	506.4
GDP change (%)	0.33	0.36	-0.07	0.10	0.10	0.10	0.76
Consumer Expenditure (%)	0.16	0.18	0.01	0.05	0.04	0.05	0.38
Philippines							
EV (\$US Million)	77.54	5.79	-9.29	16.22	-1.27	14.88	86.53
GDP change (%)	0.3	0.02	-0.42	0.06	-0.01	0.06	0.36
Consumer Expenditure (%)	0.1	0.01	-0.01	0.02	-0.01	0.02	0.11
Scenario 2							
Thailand	2004	2005	2006	2007	2008	2009	2010
EV (\$US Million)	79.1	16.6	25.9	56.8	29.9	57.7	417.9
GDP change (%)	0.2	0.03	-0.05	0.09	0.04	0.08	0.71
Consumer Expenditure (%)	0.0	0.01	0.02	0.05	0.02	0.05	0.34
Philippines							
EV (\$US Million)	-16.79	5.66	-72.49	16.23	-1.25	14.93	87.39
GDP change (%)	-0.0	0.02	-0.30	0.07	-0.01	0.06	0.37
Consumer Expenditure (%)	-0.0	0.01	-0.10	0.02	0.00	0.02	0.11

Source: GTAP simulation

Table 4. Welfare decomposition in Thailand and Philippines.

(Million US dollars)							
Scenario 1							
Thailand	2004	2005	2006	2007	2008	2009	2010
alloc	-42.21	-47.07	72.52	3.84	3.40	3.47	26.94
tot	264.34	312.62	-55.79	68.14	56.19	63.84	528.71
IS	-21.93	-26.22	1.91	-6.53	-4.74	-6.23	-49.27
Total	200.20	239.34	18.64	65.45	54.85	61.09	506.38
Philippines							
alloc	-13.84	-0.61	92.46	-0.34	-0.01	-0.59	-9.87
tot	93.83	6.57	-105.04	17.00	-1.27	15.89	98.92
IS	-2.46	-0.17	3.29	-0.44	0.03	-0.41	-2.51
Total	77.54	5.79	-9.29	16.22	-1.25	14.88	86.53
Scenario 2							
Thailand	2004	2005	2006	2007	2008	2009	2010
alloc	-60.27	-0.03	58.70	5.34	5.22	12.51	26.02
tot	144.26	18.35	-33.19	57.14	28.09	51.17	433.02
IS	-4.89	-1.75	0.40	-5.66	-3.38	-6.02	-41.14
Total	79.11	16.57	25.91	56.83	29.93	57.66	417.91
Philippines							
alloc	-9.00	-0.38	2.21	0.33	-0.01	0.06	-5.18
tot	-9.43	6.20	-76.75	16.34	-1.27	15.28	95.03
IS	1.64	-0.16	2.04	-0.43	0.03	-0.40	-2.46
Total	-16.79	5.66	-72.49	16.23	-1.25	14.93	87.39

Source: GTAP simulation

Notes: alloc: allocative efficiency, tot: terms of trade, IS: saving -investment

Effect of export goods from Thailand and the Philippines to ASEAN

Table 5 presents estimated percent changes by sector in Thailand and the Philippines to AFTA being implemented in its fully liberalized form. The Philippines is projected to experience more significant structural adjustments in terms of sectoral output compared with Thailand. As regards the sectors that export all commodities sectors (Scenarios 1), related goods, the Philippines emerge as key winner, whereas non-agricultural sectors (Scenarios 2) that may face export composition become the losers. The performance of sectors such as agricultural and food sectors is quite exceptional. All other sectors deteriorated in both scenarios except for the mineral product sectors in Thailand in Scenario 2 which showed a consistent positive output response and also have the highest output growth among them, which is more than the Philippines. Conversely, the same all commodities sectors (Scenarios1) in Thailand appear to be the significant loser from the AFTA FTAs.

Table 5. Effect of export goods from Thailand and Philippines to ASEAN

	Scenario 1								Scenario 2						
Thailand	2004	2005	2006	2007	2008	2009	2010	Thailand	2004	2005	2006	2007	2008	2009	2010
Agri_food	6.10	6.11	-0.32	-0.01	0.23	0	0.34	Agri_food	-0.63	-0.06	0.21	-0.17	-0.05	-0.12	-1.27
Fish_Fore	-1.22	-1.19	-0.63	0.07	-0.05	0.08	0.7	Fish_Fore	-0.15	-0.02	-0.02	-0.07	-0.03	-0.06	-0.50
Mining	-1.79	-1.7	-2.7	0.24	-0.2	0.23	1.14	Mining	-1.62	0.09	-2.69	0.24	-0.12	0.16	1.12
Wood_paper	2.15	2.12	0.11	-0.1	-0.03	-0.09	-0.73	Wood_paper	2.97	-0.03	0.05	-0.09	-0.02	-0.05	-0.59
Mineral_prod.	0.22	0.27	1.06	0.19	-0.03	0.20	1.41	Mineral_prod.	0.55	0.05	1.02	0.20	0.02	0.19	1.54
Textile_app.	-0.03	-0.15	1.03	-0.31	0.05	-0.29	-1.46	Textile_app.	-0.33	-0.11	1.00	-0.30	0.08	-0.16	-1.40
Elect machine.	-1.83	-1.77	-1.77	0.14	-0.13	0.12	0.27	Elect machine.	-1.12	0.07	-1.83	0.15	-0.10	0.01	0.59
Transport_eq.	1.57	1.63	0.34	0.15	0.11	0.14	1.23	Transport_eq.	2.29	0.06	0.29	0.16	0.14	0.16	1.40
Other_mana.	-2.10	-2.24	0.63	-0.45	-0.08	-0.43	-3.05	Other_mana.	-1.10	-0.14	0.56	-0.43	-0.01	-0.29	-2.93
Construction.	-0.95	-1.01	0.08	-0.17	-0.12	-0.17	-1.36	Construction.	-0.48	-0.05	0.04	-0.16	-0.09	-0.12	-1.28
Trade	-2.39	-2.5	0.5	-0.34	-0.16	-0.33	-2.48	Trade	-1.69	-0.11	0.45	-0.33	-0.12	-0.19	-2.44
Transport_co.	-0.99	-1.05	0.15	-0.16	-0.09	-0.15	-1.20	Transport_co.	-0.65	-0.05	0.13	-0.15	-0.07	-0.10	-1.14
Public service.	-2.14	-2.24	0.47	-0.33	-0.17	-0.32	-2.42	Public service.	-1.44	-0.10	0.41	-0.31	-0.12	-0.20	-2.34
Other_service	-1.95	-2.05	0.39	-0.30	-0.16	-0.29	-2.22	Other_service.	-1.41	-0.09	0.34	-0.28	-0.11	-0.17	-2.14
Philippines	2004	2005	2006	2007	2008	2009	2010	Philippines	2004	2005	2006	2007	2008	2009	2010
Agri_food	20.24	0.05	5.59	0.19	-0.01	0.17	1.06	Agri_food	-0.03	-0.06	0.82	-0.17	0.01	-0.16	-0.99
Fish_Fore	-1.19	-0.03	0.48	-0.08	0.01	-0.07	-0.46	Fish_Fore	-0.14	-0.05	0.55	-0.13	0.01	-0.12	-0.72
Mining	1.13	0.03	-0.65	0.07	-0.01	0.06	0.39	Mining	1.53	0.03	-0.50	0.08	-0.01	0.07	0.44
Wood_paper	1.84	-0.02	0.92	-0.02	-0.03	-0.01	-0.1	Wood_paper	2.71	-0.01	0.87	-0.02	-0.03	-0.01	-0.08
Mineral_prod.	1.93	0.07	0.10	0.24	-0.01	0.23	1.38	Mineral_prod.	2.57	0.07	-0.37	0.24	-0.01	0.22	1.35
Textile_app.	0.17	-0.07	1.38	-0.16	0.01	-0.15	-0.86	Textile_app.	1.13	-0.07	1.04	-0.16	0.01	-0.15	-0.85
Elect machine.	-2.11	0.05	-0.71	0.12	-0.01	0.12	0.72	Elect machine.	-1.06	0.05	-0.76	0.13	-0.01	0.12	0.76
Transport_eq.	2.50	0.02	-0.27	0.07	0.00	0.07	0.4	Transport_eq.	3.49	0.03	-0.34	0.08	0.00	0.07	0.44
Other_mana.	-0.74	-0.11	1.62	-0.29	0.02	-0.27	-1.06	Other_mana.	0.37	-0.11	1.67	-0.28	0.02	-0.26	-1.01
Construction.	-0.67	-0.04	0.52	-0.11	0.01	-0.11	-0.66	Construction.	0.03	-0.04	0.49	-0.11	0.01	-0.10	-0.63
Trade	-1.00	-0.07	1.17	-0.17	0.01	-0.16	-0.97	Trade	-0.15	-0.06	0.79	-0.17	0.01	-0.16	-0.97
Transport_co.	-0.22	-0.02	0.31	-0.06	0.00	-0.05	-0.33	Transport_co.	0.09	-0.02	0.26	-0.06	0.00	-0.05	-0.33
Public service.	-0.93	-0.07	0.87	-0.18	0.01	-0.17	-1.06	Public service.	-0.10	-0.07	0.84	-0.18	0.01	-0.17	-1.03
Other_service	-0.76	-0.07	0.82	-0.19	0.01	-0.18	-1.12	Other_service.	-0.17	-0.07	0.89	-0.19	0.01	-0.18	-1.09

Source: GTAP simulation

Conclusions

This study assessed the impact of the Economic of Free Trade Agreement (FTA) in ASEAN on multilateral trade development of Thailand and the Philippines. This experiment used a simulation analysis based on a GTAP/CGE model. The GTAP model simulations help us to identify which region may benefit or may suffer losses, in other words “winner and loser” aspect. A number of changes are expected to occur in bilateral tariff with formation of FTAs. In order to quantify the effects of the proposed FTAs, we examined two scenarios, all commodities and non-agricultural sectors.

There are three main simulation results. First, Thailand and the Philippines imported large amount of value from other ASEAN countries. While considering the level of import-export trade bilateral in the ASEAN, it was noticed that, basically, Thailand experienced gains in tradable-mineral product sectors. Meanwhile, the Philippines experienced gains in tradable-agricultural and food sectors.

Second, results from simulation in the different implications also confirm that the AFTA-CEPT would affect Thailand and the Philippines because full reciprocity would impact negatively on the Thailand and the Philippines’s FTA, both in terms of GDP, trade balance and allocative efficiency effect.

Third, the implementation had positive results, in terms of welfare in Thailand and the Philippines. Positive effect of ASEAN, which would benefit the consumer or household in ASEAN countries, would have been weighed against these probable losses in revenue.

As far as the economic impact of trade liberalization is concerned, it must be noted that the estimated impact of AFTA varies on the degree of macroeconomic gains and the direction of structural change according to the agreement partners. It is not certain that regions and preferential trade liberalization would realize welfare improvement with more efficient resource allocation given by global and non-discriminatory trade liberalization.

From a practical point of view (Ando and Urata 2006), these results indicate that Thailand obtains the greater benefit with the larger coverage membership. The potential gain for the Philippines remains unclear. Indeed, the short-time impact would be more significant for both countries within ASEAN countries. The competitive impact of exports in agricultural and food quantitatively affects Thailand when the tariff rate is cut.

Furthermore, because there are more participants with various concerns, not just in trade but also in other areas such as the environment, labor and development, multilateral trade liberalization, etc., it has become much more difficult come up with agreement. In addition, the costs and disadvantages of non-participation in FTAs can be a political and diplomatic matter of concern.

References

- Adams F. G., Park I. 1995. "Measuring the impact of AFTA: an application of a link CGE system." *Journal of Policy Modeling*. Vol.17. No.4. pp.325- 365.
- Ando M., Urata S. 2006. "The Impacts of East Asia FTA: A CGE Model Simulation Study." JSPS-NRCT, Core University Program Conference, October 27-28, 2006. Kanhaikan Hall: Doshisha University.
- Armington, P.S. 1969. "A theory of demand for products distinguished by place of production." *International Monetary Fund staff paper*. Vol.16. No. 1.
- ASEAN Secretariat. 1998. *AFTA Reader*. ASEAN Secretariat, Jakarta.
- ASEAN Secretariat. 2002. "South East Asia: A Free Trade Area, Information on AFTA." ASEAN Secretariat, Jakarta. <http://www.aseansec.org/viewpdf.asp?file=pdf/afta.pdf>
- ASEAN Secretariat. 2005. *ASEAN Statistical Yearbook*. ASEAN Secretariat, Jakarta.
- GATT. 1994. *The results of the Uruguay round of multilateral trade negotiations, General Trade Analysis*, Purdue University, Indiana.
- Hertel, T. W. 1997. *Global trade analysis: modeling and applications*. New York: Cambridge University press, Cambridge.

- Indira, M. H. Mangunsong, C. 2006. "Determinant of AFTA members' trade flow and potential for trade diversion." *Asia-Pacific Research and Training Network on Trade, working papers* No. 21. Indonesia.
- Karingi, S., Romain, P., Oulmane, N., Lang, R., Jallab, M., S. 2006. "Assessment of the impact of the economic partnership agreement between the COMSEA countries and the European Union." MPRA Paper 13294, University Library of Munich, Germany.
- Kawasaki, K. 2003. "The impact of free trade agreement in Asia." Research Institute of Economy, Trade and Industry, Tokyo.
- Kohpaiboon, A. 2009. "Exporters' response to AFTA tariff preferences: evidence from Thailand." *Economic Research and Training Center, discussion paper* No. 17. Bangkok.
- Moktan, S. 2008. "Assessing the economic impact and welfare implications of SAFTA and SAFTA+3+2: the south Asian experience." EcoMod, International Conference, Istanbul.
- Siriwardana, M. 2007. "Can Japan afford to exclude agricultural trade from an FTA with Australia: some preliminary findings." Center for Contemporary Asian Studies, Doshisha University, Kyoto.
- Siriwardana, M. Yang, J. 2008. "GTAP Model Analysis of the Economic Effects of an Australia-China FTA: Welfare and Sectoral Aspects." *Global Economic Review*. Vol.37. pp.341-362.

Ecological and Environmental Migration Policy: Its Socioeconomic Impacts to the Ranching Households In Inner Mongolia

Zhan Jin

Minami Kyushu Junior College

jin@mkjc.ac.jp

Abstract

China has established two measures that are aimed at restoring the degraded land resources brought about by excessive development. These are the Conversion of Farmland for Forestry and Pasture Use, and Conversion of Grazing Land for Pasture Use, which were implemented in many areas starting in the 1990s. Along with these two measures, a supplementary program of Environmental Migration was instituted for ranching households whose livelihood would be adversely affected by the above mentioned government measures. However, as the government had placed a priority on its land restoration measures, the Environmental Migration program in Inner Mongolia actually exacerbated the impact on ranching households, resulting in a declining standard of living. By examining the content of the policy and the manner by which it is being implemented, this paper clarifies whether the deterioration of the standard of living was caused by the Environmental Migration program itself or by the actual execution of the program. This paper also analyzes the domestic finances of the ranching households, and the socioeconomic impact of the Environmental Migration program to the ranching households.

Introduction

Research on environmental issues in Inner Mongolia, and the approaches of the government to address those issues has been gaining momentum since 2000, in response to the increasingly serious problem of land degradation. In 1996, around 459 million hectares or 58.3% of the total grassland area in Inner Mongolia have been degraded (Wang 2006). In 2004, however, that figure had risen to 90% (Nemekhjargal 2006). Researchers have identified several contributing factors to the grassland degradation. These include increasing population due to the large scale migration of Han people (Borjigin 2001; Du 2005; Na Ren-Hua 2007), overgrazing (Oniki and Shuangxi 2004; Du 2005; Oniki and Gensuo 2006; Saixialt, Sakai, and Koizumi 2007), excessive cultivation (Na Ren-Hua 2007; Du 2005), construction of roads and factories, and the mining operations (Nemekhjargal 2006). To address these problems, the Program for the Conversion of Farmland for Forestry and Pasture Use was implemented in 2000, followed by the implementation of the Program for the Conversion of Grazing Land for Pasture Use in 2003.

These programs led to the classification of the grazing land into three categories, called the Three New Grazing Policies, namely: Grazing Cessation Land, in which livestock grazing would cease during the germination of grass; Grazing Rotation Land, in which grazing would be rotated, and Grazing Prohibited Land, where grazing would be

temporarily prohibited. Thereafter, the government implemented its Ecological and Environmental Migration Policy to provide support for ranching households whose livelihood would be adversely affected by the two land use conversion programs (Batu 2007).

The Ecological and Environmental Migration Policy is comprised of two main components: grazing and migration. The grazing component limits the amount of livestock per ranching household by stipulating the area of pasture required for each animal. Although the area per head of livestock differs by prefecture, ranching households which exceed the allowed number of livestock are charged for each head in excess of the limit.

The second component involves the migration of ranching households whose lands are subject to the Three New Grazing Policies. The government encourages ranching families to relocate in the urban areas (towns) of prefectures where their ranches are located, and provides employment support, as well. Furthermore, these ranching households are given preferential treatment in the form of annual subsidies for prohibited grazing per 6.7a for the ranching households holding pasture in cessation. According to the government, the Ecological and Environmental Migration Policy is not merely a prohibition of grazing but rather a means of promoting voluntary migration under conditions favorable to ranching households. However, despite the government's intentions, a great deal of research based on field surveys has shown that Ecological and Environmental Migration Policy is compulsory to a certain degree and that the standard of living of ranching households subject to the policy has been lowered.

This paper aims to clarify whether the declining standard of living of ranching households was caused by the Environmental Migration Policy itself or through the execution of the policy. This was done by examining both the content of the program and the manner in which it was actually implemented. This study analyzes the domestic finances of ranching households and discusses the economic impact of the Environmental Migration Policy to ranching families.

Survey Areas and Target Farmers

The study was conducted in Bayan-Ovoo Village in Wurigentala Town, located in the north eastern area of Sonid Right Banner (Figure 1) and covers an area of 35,510 ha. It is approximately 75km from Saihantala, the capital of the Banner. However, the road has yet to be developed and it takes approximately three hours from the town to the closest farming household. The population of Bayan-Ovoo Village is 297 people (136 males and 161 females) living in 93 households. All households in Bayan-Ovoo Village were all involved in livestock production, until the implementation of the Ecological and Environmental Migration Policies. Domestic income results from livestock production as well as from off-farm works. The net income per person in 2006 was recorded as 1,331 CNY, which was significantly less than the net income per agricultural worker in Sonid Right Banner in 2005 (1,864 CNY). If both income and expenditures after the migration continue falling universally, the standard of living of the Ecological and Environmental Migrants will drop even below the level of the agricultural workers with lowest standard of living in Inner Mongolia.

While implementation of the Ecological and Environmental Migration Policies in Sonid Right Banner began in 2002, Bayan-Ovoo Village was selected as experimental area of the Grazing Prohibited Land in 2006, and Ecological and Environmental Migration Policies. Roughly, all the 35,510 ha in the village were closed and grazing in these areas was prohibited. However, the grassland possessed by 77 (235 individuals) out of the 93 households is classified as the Prohibited Grazing area, while the rest of the 16 households continue (with 62 individuals) with their livestock production in the grassland at least more than 6,265 ha (17.6%) without migrating.

Among the 77 households that were covered by the Ecological and Environmental Migration, 13 households moved into other areas, which are documented by the Village Committee. In addition, 27 Ecological and Environmental Migration households initially moved into Saihantala Town. However, they could not earn a living and thus, they moved to other areas. Considering these facts, the target areas of this study are the economically-poorest areas engaged in livestock production where the Ecological and Environmental Migration Policies were strictly implemented. Interviews were conducted to all the members of the 37 households living in Saihantala Town, in order to capture the whole picture of Bayan-Ovoo Village. The study was carried out in August 2008.

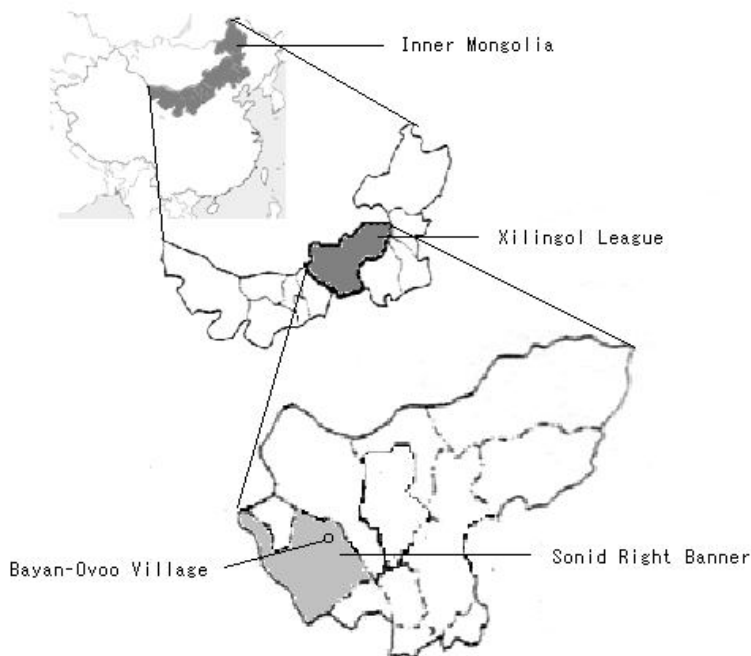


Figure1 Location of Bayan-Ovoo Village

Implementation status of the Ecological and Environmental Migration Policies in Bayan-Ovoo Village

The government imposed a five-year prohibition on grazing in Bayan-Ovoo Village from 2006 to 2011, and adopted three major laws and regulations to protect the domestic finances and standard of living of the ranching households. The Preferential Policies for the Experimental Prohibited Grazing Areas in Sonid Right Banner, Wuringentala Town, Bayan-Ovoo Village (Preferential Policies) were established to stipulate the principles of domestic finances, the provision of housing and financial aid, and the right to use grassland in Bayan-Ovoo Village.

The Ordinance on the Pension for Elderly Ranching Household Migration to Urban Areas (Pension System) was established for Ecological and Environmental Migration in Sonid Right Banner. The Livelihood Subsidies System for Farmers with Low Incomes (Livelihood Subsidies System) was adopted as a national system that provides subsidies to poor agricultural workers. Although these are not established for Ecological and Environmental Migration program, the preferential policies positioned the Livelihood Subsidies System as a financial resource to provide aid for Ecological and Environmental Migration as stated below. The specific content of the nine major articles of the preferential policies are examined including their state of implementation.

Impact of the Ecological and Environmental Migration Policies on domestic finances

The implementation of the Ecological and Environmental Migration Policies created an impact on the domestic finances of livestock households. However, these did not produce adverse effects in all cases, as evidenced by the fact that the income of some households increased to levels higher than their income before migration. I separated those who received and did not receive preferential treatment and analyzed the impact of the Ecological and Environmental Migration Policies on the livelihood of livestock households. Figure 2 shows each system stipulated in the Ecological and Environmental Migration Policies for each subject.

Non-working youth, including children subject to compulsory education (up to junior high school) are eligible to receive subsidies and exemptions from tuition and textbook fees. If the subsidies for education are considered as income, the higher the income becomes, the more school-age children among the Ecological and Environmental Migrants are to receive preferential treatment. In addition, the non-working elderly who had no income before migration becomes eligible for livelihood subsidies and pensions as a result of migration. In other words, the migrants who are 50 years old and above, gained an income through migration. This leads to the improvement of livelihood to some extent for the non-working elderly in the middle and poor class. It was raised by some interview respondents that only the elderly and children have received the subsidies and benefits through migration, and this seems to accurately reflect the situation.

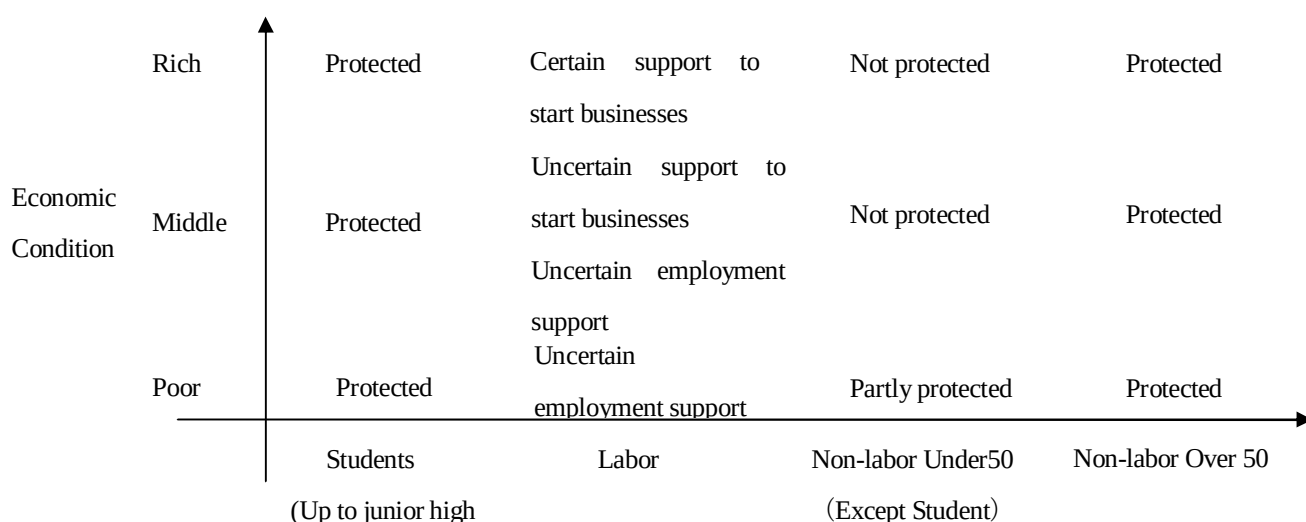


Figure 2. Function of Ecological and Environmental Migration Policy.

While school-age children and the elderly are well protected, there are varying supports to the other groups or region. The smaller number of households that belong to a “wealthy or rich class” were given higher financial support than those individuals or households who were still planning to start their business. This could be explained by the fact that the latter are just starting their businesses and they have yet to show their capacity to repay the unstable financial support. Meanwhile, the households who were engaged in livestock production before migration, may have very little employment opportunities when they moved to the urban areas, thus, adding to the high unemployment rate. Thus, these households were in financial and psychological unstable conditions. Ultimately, the limited employment opportunities and the declining household income has caused poverty in many middle-class households, and further aggravated poverty among the lower-class or poor households. Except for the extremely poor eligible for Livelihood Subsidies System, non-working youth, particularly those with disabilities that were covered by the protective government policies have increased their living expenses and aggravated poverty.

In general, the result of the Ecological and Environmental Migration Policies was a deterioration of the economic conditions of individuals in their 20s to early 50s. The impacts of the Ecological and Environmental Migration Policies shown in Figure 2 are in terms of individual member. Therefore, changes in the standard of living may differ depending on variables such as family structure.

Economic situation of ecological and environmental migrants

Table 1 shows the domestic finances of the Ecological and Environmental Migrants. Combining six households (16.2%) indicating that their standard of living “has improved”, and 15 households (40.5%) indicating that their standard of living “has not changed”, revealed that the standard of living of 21 households (56.7%) did not deteriorate. Sixteen households (43.2%) indicated that their standard of living has deteriorated, and seven

households (18.9%) indicated that their standard of living “has significantly deteriorated”. There are no time-series data on the domestic finances of the respondents. Therefore, improvement and deterioration of the standard of living discussed in this study are beyond the economic index. There were also impacts on the psychological aspects of the respondents as a result of migration. In addition, it is necessary to note that changes in living standards are relative. Therefore, the individuals who mentioned their standard of living “has deteriorated” are not always poorer than those who mentioned their standard of living “has improved.”

Table 1. Living condition of migrated households.

Living Condition		Income per capita (CNY)	Living expenditure per capita (CNY)	Surplus per capita (CNY)	Employed Ratio	Households with school-aged children	Households with the elderly	Households with ill or disabled individuals	Households started businesses
Improved 6 16.2%	Average	8,569	6,044	2,525	72.2%				
	Max	11,326	8,893	6,076	100.0%	3	1	0	4
	Min	3,867	3,200	667	33.3%	(50.0%)	(16.7%)	(0.0%)	(60.0%)
	S.D.	2,729	2,151	2,158	25.1%				
No change 15 40.5%	Average	5,668	3,532	2,137	50.2%				
	Max	10,884	4,800	6,644	100.0%	6	5	1	2
	Min	2,990	2,120	0	0.0%	(40.0%)	(33.3%)	(6.7%)	(13.3%)
	S.D.	2,257	915	1,947	30.7%				
Deteriorated 16 43.2%	Average	5,786	4,580	1,207	50.5%				
	Max	13,237	7,760	5,477	75.0%	9	2	4	6
	Min	1,930	1,920	-1,328	20.0%	(56.3%)	(12.5%)	(25.0%)	(37.5%)
	S.D.	2,602	1,598	1,798	15.6%				
Surplus: the difference between income and living expenditures									

The average income per person of the households with an “improved” standard of living is significantly higher than the average income per person of other households. There was no significant difference between those whose standard of living “has not changed” and “has deteriorated.” The average living expenditures of the households whose standard of living “has improved” are also higher than the average living expenditures of other households. However, the average living expenditures of the households whose standard of living “has deteriorated” are 1000 CNY or more than those whose standard of living “has not changed.” This shows a strong possibility that the increased cost of living in those households caused the deterioration of their standard of living. This is backed up by the fact that four out of five households with ill persons or persons with disabilities indicated their standard of living “has deteriorated.” In addition, the surplus (the difference between income and living expenditures) per person of the households that indicated their standard of living “has deteriorated” is the lowest, suggesting that the burden of the cost of living is severe.

While it might be thought that the heavier burden of the higher cost of living in households with school-age children or the elderly, as well as those with ill or disabled individuals would have an impact on the results, Tables 3-a and 3-b show no statistical relationship between having elderly or school-aged children and a deterioration of standard of living, proving that both households are protected by the government. In addition, Table 2-e reveals a high correlation ($X^2 = 13.397$, $p = 0.000$) between having elderly and being eligible for the Livelihood Subsidies System, indicating that the livelihood of the elderly is protected to a certain degree. While the households with school-aged children or elderly are protected by the government, households with ill or disabled individuals reveal a statistical deterioration in standard of living greater than those without ill or disabled individuals by a

10% level of significance (Table 2-c).

Furthermore, the average employment ratio, (calculated by dividing the number of employees by the number of household members), of the households whose standard of living “has improved” was significantly higher than other households, suggesting that offering employment opportunities to those who have marketable skills is the most important factor in the stabilization of lifestyle.

Among the households whose standard of living “has improved,” 60.0% started businesses, which is a higher percentage than those whose standard of living “has not changed” (13.2%) and “has deteriorated” (37.5%) (Table1). Table 2-d shows the relationship between those who are short or have not starts a business and improvement of standard of living. The table reveals statistically that starting a business contributed to the improvement of standard of living of the migrants by a 5% level of significance. However, six out of 12 households indicated their standard of living “has deteriorated,” meaning that the risks involved in starting a business for livestock households whose members are short on experience at companies in the tertiary industry are relatively high. Among the successful businesses that were initiated by some households include precious metal processing, motorcycle service, and fish markets. Businesses that seemed to fail include restaurants, billiard halls, Mongolian dressmakers, etc. and which have limited targets, such as Mongolians, who were also Ecological and Environmental Migrants.

Table 2a. Correlation between “Deterioration of standard of living” and “households with the elderly”.

		Deterioration of standard of living					
		no		yes		Total	
Households with the elderly	yes	6 28.6%	75.0% 16.2%	2 12.5%	25.0% 5.4%	8 21.6%	100.0%
	no	15 71.4%	51.7% 40.5%	14 87.5%	48.3% 37.8%	29 78.4%	100.0%
	Total	21 100.0%	56.8%	16 100.0%	43.2%	37 100.0%	100.0%
	χ^2 (Chi-Square) Value 1.384, p=0.239.						

Table 2b. Correlation between “Deterioration of standard of living” and “households with school-aged children”.

		Deterioration of standard of living					
		no		yes		Total	
Households with school-aged children	yes	9 42.9%	50.0% 24.3%	9 56.3%	50.0% 24.3%	18 48.6%	100.0%
	no	12 57.1%	63.2% 32.4%	7 43.8%	36.8% 18.9%	19 51.4%	100.0%
	Total	21 100.0%	56.8%	16 100.0%	43.2%	37 100.0%	100.0%
	χ^2 < Chi-Square > Value 0.652, p=0.419.						

Table 2c. Correlation between “Deterioration of standard of living” and “households with ill or disabled individuals”.

		Deterioration of standard of living				Total	
		no		yes			
Households with ill or disabled individuals	yes	1 4.8%	20.0% 2.7%	4 25.0%	80.0% 10.8%	5 13.5%	100.0%
	no	20 95.2%	62.5% 54.1%	12 75.0%	37.5% 32.4%	32 86.5%	100.0%
	Total	21 100.0%	56.8%	16 100.0%	43.2%	37 100.0%	100.0%
	χ^2 (Chi-Square) Value 3.182, p=0.074.						

Table 2d. Correlation between “Improved of standard of living” and “households started businesses”.

		Livelihood Subsidies				Total	
		no		yes			
Households with the elderly	yes	0 0.0%	0.0% 0.0%	8 50.0%	100.0% 21.6%	8 21.6%	100.0%
	no	21 100.0%	72.4% 56.8%	8 50.0%	27.6% 21.6%	29 78.4%	100.0%
	Total	21 100.0%	56.8%	16 100.0%	43.2%	37 100.0%	100.0%
	χ^2 (Chi-Square) Value 13.397, p=0.000.						

Table 2e. Correlation between “Households with the elderly” and “livelihood subsidies”.

		Improved of standard of living				Total	
		no		yes			
Households started businesses	no	23 74.2%	92.0% 62.2%	2 33.3%	8.0% 5.4%	25 67.6%	100.0%
	yes	8 25.8%	66.7% 21.6%	4 66.7%	33.3% 10.8%	12 32.4%	100.0%
	Total	31 100.0%	83.8%	6 100.0%	16.2%	37 100.0%	100.0%
	χ^2 (Chi-Square) Value 3.830, p=0.050.						

Issues and Concerns of the Ecological and Environmental Migration Policies

Although the field survey results show that the standard of living of 56.7% of migrants has not deteriorated, the respondents were only 37 of 77 migrant households engaged in livestock production. There are still 40 households who were not participants of this study and thus, the changes in their economic status before and after migration are still unknown. Even if the standard of living of the above-stated 13 households that moved into other areas has not deteriorated, it is obvious that at least 27 households whose whereabouts are unknown could not earn a living in Saihantala. As a result, this survey shows that the standard of living of 43 out of 77 migrant households (55.8%) combining 16 households has deteriorated. There are two problems with the Ecological and Environmental Migration Policies that caused anxiety to ranching households. One is related to policymaking. As a whole, the Ecological and Environmental Migration Policies are characterized as policies

that support the financially-advantaged individuals, protect a segment of the disadvantaged, and neglect the middle class. Offering support that is useful for financially-advantaged individuals equals the strengthening of their economic position, thus, contributing to the broadening of economic disparity with others. The middle class here means those among livestock households, which are usually at a disadvantage compared with households in urban areas.

For the livestock households who do not understand the common language and who are poorly-educated, leaving their familiar living environment, moving into a market economy labor force with almost no support, and competing with households in urban areas for employment may contribute to a reduction in their economic status. This means that when the government established its Ecological and Environmental Migration Policies, it did not consider the lifestyle of the migrants and the possibility that the policies might be difficult for them to communicate with others. In addition, while protection of the disadvantaged group is the most important aspect of the policies, the migrants were simply divided into age groups and only the elderly and school-aged children became the targets of these policies. Ironically, these policies protect the wealthy individuals, who do not require public support, and ignore the ill and disabled, who need public support. This implies that the Ecological and Environmental Migration Policies has not been equitable and effective.

The other problem relates to the implementation of the policy. Prior to implementation, it seems that various strategies were made to promote the migration of more livestock households. The frequency of visits to households by Village branches of the Communist Party and leaders of the women's association increased and the visit basically aimed at conducting IEC about the policies. Originally, the information dissemination should emphasize the benefits and disadvantages of migration. However, the government failed to present the potential disadvantages, emphasizing rather the possibilities of starting businesses and gaining employment, the scope of insurance and pensions, and the subsidies. In addition, delay in the payment of subsidies and the absence of preferential treatment worsened the socioeconomic conditions of the migrants. The ranching households that participated in Ecological and Environmental Migration program indicated policy campaigns, agreements at the time of migration, and the actual conditions following migration have worsened the household conditions. The government obviously failed to properly manage the program, especially with regard to providing and creating employment opportunities, which is the most important determinant in assuring a stable lifestyle of the households.

Conclusion

This paper revealed that the implementation of the Ecological and Environmental Migration Policy has created some negative impacts on the socioeconomic conditions of the ranching households that have been relocated in the urban areas. The findings of the study also suggest that there was an inefficient and inequitable implementation of the policy. There is a need to improve the content and implementation of the Ecological and Environmental Migration Policy in order to secure the standard of living of target households. Further, the scope of the policy should be expanded to include ill and disabled individuals to protect their human and other social rights and reinforce the maintenance of

their standard of living. The government should likewise create employment opportunities to stabilize the income and/or economic conditions of the migrants.

When the households moved to the urban areas, they were faced with a number of concerns such as the high cost of utilities and food, unemployment, loss of grassland culture, and even language barriers. The Ecological and Environmental Migration Policy was implemented as a supplementary measure to government environmental policies. It is expected that prohibited grazing will lead towards achieving the goal of grassland recovery. The State Grasslands Administration Bureau (2008) reported that the average production of pasture is 35.2g /m² in the grasslands of Bayan-Ovoo, 51% greater than areas that did not implement the Conversion of Grazing Land for Pasture Use Program (investigated on June 19th, 2008). However, this study further revealed the households' observation that the grasslands did not improve at all for the past three years. While grazing was prohibited in order to improve the grasslands, the large-scale mining operations around the village somehow deter the grassland improvement/rehabilitation.

References

- Shunji Oniki, Masaru Kagatsume, Yu Jin. "Effects of the Conservation Set-Aside Program on the Farming Economy in China – The Case of Shanxi Province and Inner Mongolia Autonomous Region". *Agricultural Economics Research*. 78(4). March 2007. pp.174-180
- Shunji Oniki, Gensuo B. "Efficiency of Livestock Production and Grassland Conservation in Inner Mongolia, China". *The Special Issue of the Journal of Rural Economics by the Agricultural Economics Society of Japan*. pp.254-258. 2006.
- Shunji Oniki, Shuang Xi. "Regional Overgrazing in Inner Mongolia and Mongolia – Results of Household Surveys. *Journal of Rural Economics* 75 (4). March 2004. pp.198-205.
- Saixialt, Satoru Sakai, Takee Koizumi. "The Relationship between the Density of Livestock and Grassland Degradation in Abagahoshu Steppe in China's Inner Mongolia". *Tokyo Gakugei University Journal: Humanities & Social Sciences* 2. 58. January 2007. pp. 21-35.
- Dagura. "Issues in Dairy Management under the Ecological and Environmental Migration Policy". *Asia Research*. 53 (1). January 2007. pp. 58-65.
- Du Fu-Lin. "Environmental Issues in China – Focusing on Desertification and Soil Flowage in Inner Mongolia" *Quarterly Journal China*. (80) 2005 pp. 56-64.
- Na Ren-Hua. "One Aspect of Environmental Laws in China – Implementation of Conservation Set-Aside Program in the Inner Mongolia Autonomous Region". *The Journal of Law*. (22) 2007. 3) pp. 93-116.
- Nemekhjargal. "One Consideration on the Prohibited Grazing Policy in the Inner Mongolia Autonomous Region". *A Collection of Economic Research at Asia University*. (30) March 2006. pp. 23-48.
- Batu. "Ranching Management and Environmental Issues in Inner Mongolia". *Yokohama Journal of Social Sciences*. 12 (2). August 2007. pp. 103-126.

Borjigin Burensain. "Settlement – Village Formation and Desertification in Inner Mongolia – Cases in Horqin Area". Special Feature: Messages from Inner Mongolia. Research Journal of Desert. 11 (1). April 2001. pp. 13-22.

Dalintai, Enhe. 2006. "Research on the Causes for Land Desertification in Inner Mongolia" Friends of Nature.

(June) URL: <http://www.fon.org.cn/content.php?aid=387>. Reference date: October 22nd.

Wang Yu Ling. Research on Basic Economic Issues in Minority Areas. Central Nationalities University Press. 2006. P.340.

Assessing the Solid Waste Management Practices in Bacolod City, Philippines

Ma. Teresa B. Ballados

Carlos Hilado Memorial State College
Talisay City, Negros Occidental, Philippines
chmsc_rds@yahoo.com

Abstract

This paper highlights the results of the study that was conducted to analyze the solid waste management practices of the waste generators, and the extent of their compliance with the Republic Act 9003, otherwise known as the Ecological Solid Waste Management Act of 2000. The study was conducted in Bacolod City, Philippines in 2007. The study utilized the descriptive method of research and employed survey research to gather data. The findings of this study served as basis in developing a handbook on solid waste management.

Research findings showed that the waste generators do not practice waste segregation. Dumping of wastes in the streets, rivers and open drainage are often practiced. The respondents do not also practice recycling of wastes because of the lack of facilities and lack of support from the local government units. Thus, this study indicates that the local government units do not comply with the implementing rules and regulations of the RA 9003. Lack of financial resources, lack of authority to make financial and administrative decisions, no proper institutional set-up for solid waste management, the difficulty of locating and/or acquiring landfill site, and the poor public cooperation were among the factors that influence the non-compliance of the local government units with the RA 9003.

Thus, massive educational campaign on appropriate and effective solid waste management practices should be conducted in the residential, institutional, industrial, hospitals and commercial establishments to promote public awareness. The local government units should formulate a long-term and comprehensive solid waste management programs that would encourage and motivate the public to encourage their cooperation and participation. The local government units should likewise reach out and build partnership with non-government organizations, private sectors and civic organizations to mobilize resources.

Keywords: *solid waste management, implementing rules and regulations, compliance*

Introduction

The overall challenge of sustainability is to avoid crossing irreversible thresholds that damage the life systems of earth while creating long-term economic, political, and moral arrangements that secure the wellbeing of present and future generations (Orr, 2005).

A factor that could worsen the environmental crisis is the increasing accumulation of solid wastes which either have no counterpart in nature or which have not been properly disposed (Arias, 1998). Solid wastes have been identified as one of the most important environmental problems of urbanization. For an urban center with rapid-urban migration, poor solid waste management practices are considered as disastrous activities.

It has been observed that Bacolod City which is classified as highly urbanized city in Negros Occidental, Philippines, is now facing solid wastes problem resulting to a lot of environmental problems such as flood, pollution, congestion and others. This is due to the existence of the fast-growing industries in the city, which encourage the rural people to flock in the city for better employment opportunities. Alarmed by this problem, the Local Government Units (LGUs) have realized the need to improve the methods and ways in handling the solid wastes to ensure protection of public health and environment from any harm caused by these wastes.

The Republic Act 9003 also known as the Ecological Solid Waste Management Act of 2000, which stipulates the need to adopt a systematic, comprehensive and ecological solid waste management programs which shall ensure proper segregation, collection, transport, storage, treatment and disposal of solid waste through the formulation and adoption of the best environmental practices in ecological waste management excluding incineration. Those wastes must be deposited in Sanitary Landfill to ensure protection of public health and environment.

The barangay shall be responsible for the collection, segregation, recycling of biodegradable, recyclable, compostable and reusable wastes. Material Recovery Facilities (MRFs) will be established in every barangay or cluster of barangays (Section 1 of Rule XI of the IRR 9003).

The LGUs shall be primarily responsible for the implementation and enforcement of the provisions of this Act within their respective jurisdictions (RA 7160, otherwise known as the Local Government Code). Segregation and collection of solid waste shall be conducted at the barangay level specifically for biodegradable, compostable and reusable wastes provided, that the collection of non-recyclable materials and special wastes shall be the responsibility of the municipality or city (Section 10 of RA 9003).

This paper provides an analysis of the solid waste management program of Bacolod City in Negros Occidental, Philippines.

Research Methodology

A study was conducted to assess the solid waste management program in Bacolod City, Negros Occidental, Philippines. The study used the descriptive research method and employed survey in determining the current solid waste management practices and extent of compliance with RA 9003.

Two (2) sets of questionnaires were used as tools in data gathering from the waste generators and implementers of RA 9003.

The study covered the responses of 214 waste generators and 25 implementers, which were classified as barangay and city officials. Respondents from the residential areas were chosen using the multi-stage sampling. Random sampling was used to determine one sample barangay for each of the four areas in Bacolod City namely: southern, northern, central and eastern areas. The respondent-implementers, on the other hand, included the officials of the barangays where respondent-waste generators are also residing. The city officials also serve as respondents, being the persons responsible in the implementation of RA 9003.

Results and Discussion

Solid Waste Management Practices of the Waste Generators

The proper solid waste segregation includes using separate containers for biodegradable, non-biodegradable, domestic hazardous and bulky wastes with markings to distinguish the type of wastes inside, and segregating for re-use, recycling and composting. These however, are not being practiced in Barangays Sum-ag and 19 and seldom observed in Barangays Estefania and 10 (Table 1). Proper collection and transport were not practiced in the four barangays. The LGUs in the barangay level were not responsible in the collection of the biodegradable, recyclable, compostable and reusable wastes. Proper waste disposal was seldom practiced in the four barangays. Solid wastes were usually dumped in the creeks, canals, open spaces, along the sidewalks and deposited in the Felisa Open Dumpsite. Incineration was always practiced. Waste recycling was not practiced in Barangay 19 and seldom practiced in the other three barangays due to lack of recycling facilities, LGUs were not giving much attention to recycling industry as well as public were not encouraged to use recycled materials.

Table 1. Solid waste management practices of the respondent-waste generators in Bacolod City, Negros Occidental.

Respondents (Households)	Average Weighted Mean	Verbal Description
Proper waste segregation		
Barangay 10	1.68	SP
Barangay Sum-ag	1.46	NP
Barangay 19	1.42	NP
Barangay Estefania	1.95	SP
Proper Waste Collection and Transport		
Barangay 10	1.42	NP
Barangay Sum-ag	1.27	NP
Barangay 19	1.39	NP
Barangay Estefania	1.39	NP
Proper Waste Disposal		
Barangay 10	1.72	SP
Barangay Sum-ag	1.64	SP
Barangay 19	1.64	SP
Barangay Estefania	1.72	SP
Waste Recycling		
Barangay 10	1.72	SP
Barangay Sum-ag	1.58	SP
Barangay 19	1.29	NP
Barangay Estefania	2.20	SP
SP – Seldom Practiced; NP – Not Practiced		

Table 2 shows the extent of the compliance of the implementers with the Ecological Solid Waste Management Act of 2000. Barangays 10, Sum-ag including the city government unsatisfactorily complied and Barangay 19 did not comply with RA 9003, specifically on segregation of wastes. Residents are provided with designated area and containers with proper markings as “compostable”, “recyclable”, “non-recyclable”, “non-recyclable, or “special wastes” in RA 9003,

Table 2. Compliance of the respondents-implementers on the waste segregation regulations in Bacolod City, Negros Occidental.

Respondents (Barangay & City Officials)	Average Weighted Mean	Verbal Description
Barangay 10	1.72	USC
Barangay Sum-ag	1.75	UCS
Barangay 19	1.42	NC
Bacolod City Government	1.52	USC
USC – Unsatisfactorily Complied; NC – Not Complied		

In terms of waste collection and transport, (e.g. separate collection schedules and separate trucks or haulers with appropriate compartments with cover to facilitate efficient storing of sorted wastes are used), the vehicles that are being used considered the road, size, condition and capacity. Collection is done in a manner which prevents damage to the container and spillage or scattering within the collection vicinity. All collectors and other personnel are equipped with personal protective equipment to protect them from hazards of handling wastes with proper trainings to ensure that solid wastes are properly handled. The transfer stations are designed and operated for efficient waste handling capacity, the three barangays and city government were unsatisfactorily complying the said Act.

However, all of the respondent-barangays did not comply with the waste disposal using controlled dumpsite with adequate soil cover or sanitary landfill for non-biodegradable and non-recyclable wastes. The disposal area that is being maintained by the city government is an open dumpsite.

Table 3. Compliance of the respondent-implementers in the waste collection and transport regulations in Bacolod City, Negros Occidental, Philippines.

Respondents (Barangay & City Officials)	Average Weighted Mean	Verbal Description
Barangay 10	1.61	USC
Barangay Sum-ag	2.18	USC
Barangay 19	2.09	USC
Bacolod City Government	1.58	USC

Table 4. Compliance of the respondent-implementers on the waste disposal regulations in Bacolod City, Negros Occidental, Philippines.

Respondents (Barangay & City Officials)	Average Weighted Mean	Verbal Description
Barangay 10	1.40	NC
Barangay Sum-ag	1.29	NC
Barangay 19	1.03	NC
Bacolod City Government	1.07	NC

As regards the waste recycling, the compliance ranged from non-compliance to unsatisfactorily compliance. No Material Recovery Facility was established in the barangays covered by the study. There were insufficient recycling facilities provided by the LGUs in Barangay 10 and city government and non in Barangay Sum-ag and 19. Market opportunity for recycled products was given less emphasis.

Table 6. Compliance of the respondent-implementers on water recycling regulations in Bacolod City, Negros Occidental, Philippines.

Respondents (Barangay & City Officials)	Average Weighted Mean	Verbal Description
Barangay 10	1.58	USC
Barangay Sum-ag	1.46	NC
Barangay 19	1.00	NC
Bacolod City Government	1.60	USC

The results show that the respondent-barangays did not comply with the proper solid waste management regulations because of issues and problems that are being faced by the LGUs. These include the lack of financial resources; lack of authority to make financial and administrative decisions; no proper institutional set-up for solid waste management; difficulty in locating and acquiring landfill site; and poor public cooperation.

Conclusion and Recommendation

The waste generators adopted poor solid waste management practices in terms of waste segregation, collection and transport, waste disposal and recycling due to lack of awareness on proper and effective ways of managing wastes. The LGUs face a number of problems which hamper the adoption and/or compliance with the RA 9003 Act. In view of these, the following recommendations are hereby proposed:

- Massive information dissemination campaign on solid waste management should be conducted to promote public awareness. The proposed handbook could be used as an information and educational material.
- LGUs should formulate a long-term and comprehensive solid waste management programs that would encourage and motivate the public to give their cooperation and full support.
- LGUs should reach out and build partnership with non-government organizations, private sectors and civic organization for additional resources.

References

David, Fely P. Understanding and Doing Research: A Handbook for For Beginners, Panorama Printing Press, Inc. Iloilo City, 2005

Padua, Roberto N. Elements of Research and Statistical Tool MPSC Publishing House, Cagayan de Oro City, 2000

Solid Waste Management: Options and Solutions at the Local Level, Service Delivery with Impact: Resource Books for Local Government, 2004

Newspapers

Arias, Precsila, Most Efficient Means of Waste Management, Manila Bulletin, April 20, 1998

Cabreza, Vincent Plastics Helps Mold New Recycling Trade in RP, The Philippine Daily Inquirer, July 6, 2006

Ng, Jocelyn H. What to Do with “Basura”?, The Philippine Star, June 16, 2005

Papa, Joey C. and Papa, Ana V. Landfills are Unnecessary if We Recycle, The Philippine Daily Inquirer, December 26, 2004

Soliven, Preciosa S. Non-Biodegradable, The Philippine Star, July 7, 2005

Yap, DJ E-waste Problem Looms, The Philippine Inquirer, September 29, 2005

Unpublished Studies

Garol, June Melissa C. Assessment of the Factors Affecting Solid Waste Management in the City of Bacolod, 2001

Mansueto, Guadalupe O., Solid Waste Management in the Municipality of Balamban, Cebu: Sanitary Landfill Design, 2007

Government Issuances

RA 9003, Ecological Solid Waste Management Act of 2000 and its Implementing Rules and Regulations

RA 7160, the Local Government Code

PD 1152, the Philippine Environmental Code

RA 6969, Toxic Substances, Hazardous and Nuclear Wastes Control Act

PD 984, the Pollution Control Law

PD 1586, the Environmental Impact Assessment System Law

RA 8749, the Clean Air Act

Internet

De Castro, Armando, Solid Waste Management, <http://www.lcp.org.ph/Environment%20Unit/SWM-10%20Draft%20DAO%20-%20Phased%20Compliance.pdf>

Environmental Management, http://en.wikipedia.org/wiki/Environmental_management

Ogawa, Hisashi, Sustainable Solid Waste Management in Developing Countries, <http://www.gdrc.org/uem/waste/swm-fogawa1.htm>

Orr, David W., The Challenges of Sustainability, <http://www.ratical.org/co-globalize/4Cofs.htm>

Solid Waste Management, The United Nations Centre for Human Settlements (Habitat), <http://www.un.org/documents/ecosoc/cn17/1994background/ecn171994-bpch21.htm>

Solid Waste Management, <http://www.lcp.org.ph/Environment%20Unit/A1%20Solid%20Waste%20Management.htm>

Solid Waste Association of the Philippines SWAPP, (<http://www.lcp.org.ph/Environment%20Unit/A-1%20Solid%20Waste%20Management.htm>)

Stokeo, Jim and Teague, Elizabeth, Integrated Solid Waste Management for Rural Areas, 2002, <http://www.usda.gov/rus/water/docs/swmngmt.pdf>

Triangle's Best Solid Waste Management Practices <http://www.p2pays.org/ref/26/25967.pdf>

Zurbrugg, Christian, Urban Solid Waste Management in Low-Income Countries of Asia, How to Cope with the Garbage Crisis, http://www.eawag.ch/organisation/abteilungen/sandec/publikationen/publications_swm/dowloads_swm/USWM-Asia.pdf (Insert your references here)

Current State of Marine Fishery Resource-Related Ordinances in Selected Marine Protected Areas in Bicol Region, Philippines

Fay Lea Patria M. Lauraya

Nestor W. Dullesco

Angelo P. Candelaria

Bicol University Research and Development Center

Legazpi City, Philippines

apcandelaria@yahoo.com

Abstract

Legislation for marine protected areas (MPAs) provides formal structure for implementing marine resources management and conservation activities. Aimed at attaining effective local governance in coastal communities, these ordinances provide specific legal basis for management, but they do not guarantee success in managing MPAs. This paper investigated essentially how marine fishery-related ordinances are responding to the objectives for which MPAs and related projects are established. Four municipalities in four provinces of Region V with declared marine protected areas were assessed as regards the implementation of their marine fishery resource-related ordinances.

The study inventoried all the marine-related ordinances implemented by the municipalities, documented how these ordinances evolved, and assessed the extent of this implementation. The data were gathered through surveys, documentary researches and interviews with 100 respondents composed of fisherfolks and barangay officials in each site. The respondents in each municipality were proportionately distributed to the fisher population of the barangays covered by the same reserve and sanctuary areas.

The marine protected areas have been in operation for almost 4-10 years. Most of the fishing communities concerned were aware about the existence of the ordinances and their initial implementation gained some degree of effectiveness. Except for San Miguel Island in Tabaco City, the barangays and municipal governments involved in the other sites neither have adequate logistics nor have committed funds to sustain the implementation of said laws.

Keywords: *Marine Resource-Related Ordinances, Marine Fishery Reserves, Bicol Region*

Introduction

A key area for the successful implementation of legislative measures addressed to specific societal issue/s is the political will of the government units concerned. This has gained much significance in the light of the empowerment of the local government units in area development and environment protection and preservation as mandated by R.A. 7160 or the Local Government Code. The existence of ordinances or laws, however, should be supported by government logistics for its effective implementation complemented with a very strong public support system. Otherwise, laws or ordinances shall remain toothless and therefore, ineffective. It is but logical to presume that municipalities considered as marine and aquatic protected areas have passed marine-related ordinances. However, very little is known with respect to the main objectives of these ordinances as well as the extent of their implementation in terms of the degree of enforcement, cost-effectiveness of implementation process and overall impact on various sectors.

The study is premised on the concept that successful implementation of these ordinances could spell the difference between the sustainable and non-sustainable economic well being of the stakeholders, now and in the future. Given this scenario, the study aimed to:

- Gather a listing of municipal ordinances related to marine-fishery resource utilization and management;
- Trace the historical development of these municipal ordinances;
- Assess the mechanisms involved in the implementation process;
- Evaluate the extent of implementation of these municipal ordinances as to the realization of their respective objectives; and,
- Identify factors that hindered and or facilitated implementation process.

This study is part of the Socio-Economics Administrative and Legal Component of the Bicol Fish Biodiversity Program Towards the Protection and Conservation of the Fishery Resources of Bicol implemented by Bicol University from 1998 to 2003. The Biodiversity Program aims to protect and enhance the fish biodiversity of Bicol's marine and aquatic habitats through assessment of stocks and key issues affecting the sector; recognition of stakeholder groups' contributions to biodiversity protection, management and enhancement; and institutionalizing support for protective management programs by the local government units. To meet these



Figure 1. Bicol Region

objectives, the program covered three (3) other components namely: Stock Assessment, Coastal Habitat Assessment, and Integrated Resource Management. The research activities and development initiatives of the program covered major fishing grounds in Bicol. This paper highlights the outcomes of the research conducted in the four selected provinces of Bicol with declared marine protected areas. The research covered the barangays and municipalities where the protected marine areas are located specifically those with reserves and sanctuaries such as Sagurong, San Miguel Island in Tabaco City, Agojo in San Andres, Catanduanes, Atulayan in Sangay, Camarines Sur and Recodo in Cawayan, Masbate

Methodology

The identification of the study area was made using the following criteria: 1) the marine protected area covering marine reserves and sanctuaries must be functional or operational (i.e. the ordinances which established the protected area must be enforced); 2) marine fishery reserves/sanctuaries must have been in existence for at least three years; 3) there should be government or non-government entities (e.g. GO, NGOs, POs), which provide management direction for the sites; and 4) a good representation of ecological habitats (i.e. coral reef, mangrove, seagrass/seaweed beds) must exist.

The marine protected areas chosen are found in Sagurong, San Miguel Island in Tabaco City, Agojo in San Andres, Catanduanes, Atulayan in Sangay, Camarines Sur and Recodo in Cawayan, Masbate (Table 1). The data were gathered through a survey using questionnaires, documentary research and interviews with barangay and municipal officials as well as focus group discussion with the fishers. Technical data from the other sub-components of the Biodiversity Research Program was also utilized. A total of 100 samples per site was adopted and were proportionately distributed to the fisher population of the barangays per target municipality.

Table 1. Basic information of the study sites.

1. Municipality/Province	Sites			
	San Miguel Is., Tabaco City, Albay	San Andres, Catanduanes	Sangay, Camarines Sur	Cawayan, Masbate
2. No. of Barangays	4	12	5	12
3. Sample size	100	100	100	100
4. No. of years in operation	6 years	10 years	10 years	4 years
5. Area covered	Sanctuary-1.0 km ² Reserve-1.5 Km ²	Sanctuary - 127 has. Reserve -1700 has.	Sanctuary-70 has. Reserve -72 has.	Sanctuary-Brgy. Recodo Reserve-6 other islands
6. Current law enforcement	Active	Active	Active	Inactive

Results and Discussions

Existing municipal ordinances related to marine-fishery resource utilization and management.

As indicated in Table 2, Tabaco City has passed three marine-fishery-related ordinances from 1995-1999. These were promulgated between the periods of 1996-1998. Records also revealed that five marine-fishery-related ordinances were implemented in the Municipality of San Andres in Catanduanes, from the period 1993 to 1998. Likewise, in Sangay, Camarines Sur, five ordinances were passed for implementation from 1993 to 2001. However, only one marine-fishery-related ordinance was passed and implemented in the Municipality of Cawayan, Masbate, for the past four years from 1999 to 2002. This list was based on the records of the Municipal Sangguniang Secretary of each municipality

Table 2. Number of marine-related ordinances implemented in the four municipalities in Bicol.

Sites	Inventory of Marine-Related Ordinances Implemented
I. Sagurong, San Miguel Island, Tabaco, City	1. Municipal Ordinance No. 008-98 s.4. Protection of the Coral Reef at Bgy. Sagurong, San Miguel Island, Tabaco City. 2. Municipal Ordinance No. 9s. 1996. Regulations for fishing and /or fisheries in the waters of the Municipality of Tabaco, Province of Albay. 3. Municipal Ordinance No. 020-98. An Ordinance declaring Mangrove areas as per forests and as protected areas in the coastal and island barangays of Tabaco City
II. Agojo, San Andres, Catanduanes	1. Municipal Ordinance No. 03 s. 1993. Protecting the Agojo Fish Sanctuary and San Andres Marine Reserve Area and providing penalty for violation thereof. 2. Municipal Ordinance No. 05 s. 1994. An ordinance collecting fees on the issuance of auxiliary invoice to transport fish and fishery products. 3. Municipal Ordinance No. 03 s. 1995. Granting 60% of the fine imposed to violators of Municipal Ordinance No. 03 s. 1993 as amended by Ord. No. 05s. 1994 as monetary reward incentives to bantay-dagat volunteers and civilians who apprehended and/or provided pertinent information leading to the arrest and final conviction of illegal fishers and other persons engaged in illegal fishing activities in the declared fish sanctuary and marine reserve of this municipality. 4. Municipal Ordinance No. 08 s. 1995. An ordinance regulating fishing and/or fisheries in the Municipality of San Andres, Province of Catanduanes and for other purposes. 5. Municipal Ordinance No. 01 s. 1998. An ordinance banning the transport/shipment of live lapu-lapu, tropical aquarium fish and lobsters outside the Municipality of San Andres.
III. Atulayan, Sangay, Camarines Sur	1. Municipal Ordinance No. 93-001. An ordinance establishing a fish sanctuary and marine reserve in Atulayan Bay to be known as Atulayan Bay fish Sanctuary and Marine Reserve. 2. Municipal Ordinance No. 93-003. An ordinance imposing color coding for all fishing boats in the Municipality of Sangay, Camarines Sur. 3. Municipal Ordinance No. 93-006. An ordinance declaring Atulayan Bay as a permanent traditional fishing ground. 4. Municipal Ordinance No. 94-005. An ordinance establishing one hundred meter radius fish sanctuary around the artificial reefs at the Atulayan Bay in the Municipality of Sangay, Camarines Sur 5. Municipal Ordinance No. 94-007. An ordinance regulating fishing and or fisheries in the Municipality of Sangay, Camarines Sur, and for other purposes.
IV. Recodo, Cawayan, Masbate	1. Municipal Ordinance No. 01 s. 1999. An ordinance regulating fishing and/or fisheries in the Municipality of Cawayan, Province of Masbate and for other purposes.

Historical development of the marine-fishery resource related ordinances

In order to document how these ordinances evolved, key informant interviews were conducted to relate the events that led to the passage of these laws. Table 3 capsulates the historical developments of the ordinances in each of the research sites. The table shows that the earliest ordinance passed by the LGU was in 1993 from San Andres, Catanduanes and the latest was in 1999 from the LGU of Cawayan, Masbate. Meanwhile, San Andres, Catanduanes and Sangay, Camarines Sur have promulgated their ordinance supporting the MFRS development through the initiative of the Department of Agriculture's Bureau of Fisheries and Aquatic Resources (DA-BFAR). The City of Tabaco in Albay province shows a very distinct history of the ordinance since it emanated as an offshoot of a research conducted by the academe which was Bicol University, while the ordinance passed by the local government of Cawayan, Masbate came into being on account of the provisions adopted from Republic Act 8550 or the Fisheries Code of the Philippines.

Table 3. Historical development of the ordinances conducted by the four municipalities in Bicol Region.

Site/ Municipality	Historical Development of Municipal Ordinances
I. Sagurong, San Miguel Island Tabaco, City	• Municipal Ordinance No. 008-98 s.4. This ordinance was an offshoot of a research conducted in 1995 by the Research Team of the BU Tabaco Campus led by Prof. Victor S. Soliman on San Miguel Island Coastal Resources Management Project wherein the barangay folks were made aware of the importance of the marine resources found in their barangay and the need to protect the fish sanctuary found in their island for the preservation and propagation of the fishery resource. This was done through dialogues and seminars with residents and barangay officials. Through the Research Team and the Bicol University Research and Statistics Center (BURSC), the barangay folks and officials were given hope that their fishery resource can still be saved through the establishment of a fish sanctuary and reserve. Thus, in January 1997 through a barangay resolution from the Sagurong Barangay Council, the Barangay approved the establishment of the Marine Fishery Reserve in the coast of Barangay Sagurong. A month after, the barangay resolution was echoed into a Municipal level resolution. In the same year, the Marine Fishery Reserve Management Council was organized with the tasked of overall planning, management and development of the marine fishery reserve. The following year, the Sangguniang Bayan, passed Municipal Ordinance No. 008-98. • Municipal Ordinance No. 9s. 1996. This ordinance which provide rules and regulations for fishing and fisheries in the waters of the municipality of Tabaco, Albay (now a city) according to the Chair of the Committee on Environment and Fishery Resources of the municipality of Tabaco was passed based on his initiative to implement R.A. 7160 otherwise known as the Local Government Code empowering the local government units to protect and conserve their environment. • Ordinance No. 020-98. This ordinance was promulgated upon the initiative of the Philippine Rural Reconstruction Movement, an NGO engaged in the protection, rehabilitation and management of coastal and marine resources. Said NGO had organized small fisherfolks and urged their barangay councils to pass resolutions declaring the mangrove areas within their respective barangays as protected areas. Based on these resolutions, the Sangguniang Bayan enacted the municipal ordinances declaring the entire mangrove areas within the municipality of Tabaco as protected areas.

Site/ Municipality	Historical Development of Municipal Ordinances
II. Agojo, San Andres, Catanduanes	• Municipal Ordinance No. 03 s. 1993. This ordinance establishing the Agojo Fish Sanctuary and San Andres Marine Reserve Area was passed through the initiative and collaborative efforts of the Department of Agriculture's Bureau of Fisheries and Aquatic Resources (DA-BFAR) and the Local Government Unit (LGU) of San Andres Catanduanes. The implementation and monitoring of the ordinance is led by the LGU of San Andres through its Municipal Agriculture Office with support from the local Barangay Councils, while the law enforcement and apprehension of violators are the responsibility of the Philippine National Police (PNP) and the Bantay-Dagat. • Municipal Ordinance No. 05 s. 1994. The ordinance authorizing the LGU to collect fees for transport of fish and fishery products was passed and implemented as offshoot of the advice provided by the DA-BFAR that municipal local government units can collect fees as part of their income generation and provision of incentive support in the implementation of the fishery ordinances. • Municipal Ordinance No. 03 s. 1995. This ordinance strengthens the implementation of Mun. Ord. No 03 s. 1993 where monetary reward is given to volunteers and civilians who have assisted and/or initiated in the apprehension of violators. The implementation of this ordinance was based more on strengthening the marine fishery reserve and sanctuary project by giving incentives to intensify active community participation. • Municipal Ordinance No. 08 s. 1995. This ordinance was promulgated from the provisions of the Philippine Fishery Code which the Sangguniang Bayan of San Andres has adopted to protect the municipal waters not covered by the Mun. Ord. No. 03 s. 1993. • Municipal Ordinance No. 01 s. 1998. The rampant use of cyanide fishing through the use of compressors as strategy to catch live lapu-lapu, tropical aquarium fish and lobsters to be sold outside the municipality has prodded the LGU of San Andres to pass this ordinance.
III. Atulayan, Sangay, Camarines Sur	All the five (5) ordinances were the initiatives of the Bureau of Fisheries and Aquatic Resources (BFAR)-Regional Office No. V in pursuance to the provisions of R.A. 1790. General Assemblies at the barangay level was conducted to elicit issues from the barangay folks that would help in the drafting of the ordinances. Then a series of public hearings were made again at the barangay level prior to the submission of the proposed ordinance to the Sangguniang Bayan of Sangay. After said hearings the Municipal Council passed the said ordinances. The same process was true to all ordinances. It was noted that formulation of the municipal ordinances in Sangay as an initiative from a regional agency such as BFAR, unlike in the other marine reserve areas in the region where the ordinances were the initiative of the barangay as an offshoot of community organizing efforts from NGOs. For instance, in San Miguel Island, Tabaco City, the municipal ordinance for the declaration of the island as marine reserve and sanctuary came about from a barangay resolution. (Lauraya, et. al, 1999). The strength of implementation of the marine-fishery laws in said area was attributed to the sense of ownership of the barangay folks of the preservation and conservation effort of their resources.
IV. Recodo, Cawayan, Masbate	• Municipal Ordinance No. 01 s. 1999. The promulgation of this municipal ordinance was the initiative of the Local Government Unit through the Sangguniang Bayan Members of the Municipality of Cawayan in pursuance to the provisions of R.A. 8550 (1998 New Fisheries Code of the Philippines) which was adopted by the municipality.

Mechanisms employed in the implementation process

In San Miguel Island in Tabaco City, two out of three ordinances on marine fishery resources were promulgated as a result of the active leadership of the barangay councils and the advocacy and community organizing efforts of the external institutions. It is worthy to note that the barangay resolutions urging the passage of municipal level ordinances already carried with it the mechanism of implementation at the barangay level. For instance, Ordinance 020-98 which calls for the protection of mangrove areas

and the barangay councils should be empowered to implement and enforce said laws in their respective barangays. On the other hand, Ordinance 008-98 was preceded by the formation of a barangay marine fishery reserve management council that shall oversee the enforcement of the law as well as plan for strategies to create alternative livelihood activities for affected fisherfolks. These barangay-led initiatives were positively received by the fisherfolks. On the other hand, the effort of the municipal government to field a policeman in the barangay to enforce the ordinance brought out disagreements rather than compliance because the policeman was seen as an outsider who had little knowledge or the provisions of the law.

In the case of the Municipality of San Andres in Catanduanes, implementation and monitoring of the ordinances were undertaken by the Barangay Councils and the two local Municipal Agricultural Technicians for Fisheries. Bantay-Dagat volunteers were fielded as a one-man team patrol on a round-robin basis per week to monitor the day-to-day activities in the marine-fishery reserve and sanctuary. As an incentive, monetary reward sourced from the penalty for the apprehension of fishery-law violators were given to the Bantay-Dagat volunteers as they do not have regular funding from the local government unit. The municipality through its municipal agricultural officers equipped these volunteers with flashlights and batteries to aid their monitoring activities especially during nighttime. However, the wide spatial coverage of the sanctuary and reserve areas, the lack of essential monitoring and communication systems like handheld or VHF radios greatly affected the efficiency and effectiveness of the implementation process.

The implementation of the ordinances in Sangay, Camarines Sur is the main responsibility of the municipal government, and the barangay council is only given a secondary role. The Municipal Fishery Technician, together with the PNP, two local fisherfolks and one Barangay Official consist of the Bantay Dagat Team monitor compliance to the ordinances. The said team hires a motorboat and patrols Atulayan Bay for purposes of visibility and to deter prospective violators. Funding for the operation is provided by the Mayor's Office. Most often however, it is the barangay officials who apprehend the violators, as they are the persons of authority consistently present in the area. The operation of the team stopped in September 2001 due to lack of funding. There is no organized community effort to implement the fishery ordinances at the barangay level.

The Municipal Agricultural Officer (MAO) and the Municipal Fishery Technician (MFT) of Cawayan, Masbate, together with the Barangay Officials consists the team that monitors the compliance to the ordinance. The MAO and the MFT conduct periodic visits to the barangays as part of its monitoring activity. Funds for the monitoring visits come from the regular funding of the municipality for the travel of their local officials. Oftentimes, it is the barangay officials who were in charge of monitoring. There were no apprehensions recorded during the implementation of said ordinance.

Extent of implementation of these municipal ordinances and the realization of their objectives

With regards to the extent of implementation and realization of the objectives of the ordinances that were passed, it could be noted in Table 4 that the respondents from Cawayan, Masbate have a low level of awareness (54%) with regards to its existence compared with the four other sites. By way of comparison, from the initial ordinances that were passed, next to Cawayan is the Municipality of Sangay, Camarines Sur where the respondents' awareness as to the existence of the law was 65%. Next is the LGU of Tabaco City where 85% of the respondents have revealed that they were aware about the existence of the ordinance which initiated the protection of its marine resources in San Miguel Island. It was interesting to note that the respondents from San Andres, Catanduanes were really aware of the existence of the ordinance based from the 93% rating. The table also reveals that there were varying level of awareness of the respondents per municipality as to the existence of the ordinances that were passed depending on their objectives. The level of awareness with regard to the ordinances depended on the strategies adopted by the local governments concerned on how they disseminated its existence.

Table 4. Extent of implementation and realization of objectives of ordinances in the four municipalities

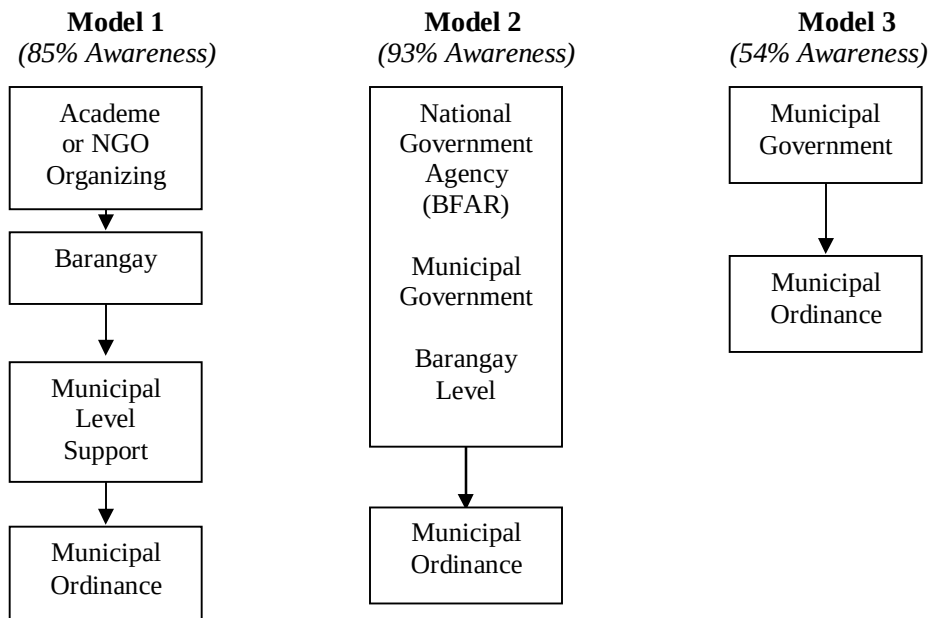
Site/ Municipality	Extent of Implementation and Realization of Objectives of Ordinances
I. Sagurong, San Miguel Island Tabaco, City	• Municipal Ordinance No. 008-98 s.4. A great majority of the respondents (85%) were aware of the existence of the law. The ordinance was viewed by the fisherfolks as having positive results in terms of regeneration of the fishes that were previously no longer observed in the area. While the ordinance is only a little over a year old when this study was conducted, the fisher respondents were very positive that it would bring benefits to their barangay. As perceived by the respondents, there is a high compliance rate of 70% among the fishermen. However, there was pervading sentiment among the fisherfolks that the weight of the penalty imposed on those that are caught are sometimes influenced by the relationship of the barangay official and the violator causing dissatisfaction among the fishermen. More than half of the respondents (52%) claimed that they were made aware of this ordinance through conversations with and information passed on to them by their fellow fishers. The second biggest group of respondents (40%) said that meetings were also effective means of informing them about the ordinance. While the respondents perceived that there is high compliance to the provisions of the ordinance, the enumerators opined that only about a fourth of the respondents (24%) were really very aware of the prohibitions and penalties required by the ordinance. • Municipal Ordinance No. 9s. 1996. A great majority also of the respondents were aware of the said ordinance. The respondents estimated that the compliance to the law was about 70% and above among the fishers. However, when queried as to the type of gears that are prohibited to be used as provided for by the law the enumerators reported very little awareness among the respondents. Meetings and information passed on by their fellow fishers were found to be the most frequently reported mode of communicating the implementation or existence of the ordinance. • Municipal Ordinance No. 020-98. Compared to the two other ordinances, this was the least known among the respondents. Perhaps, this explains why one Barangay Secretary said that there is hardly any mangrove left in their barangay and it is only now that they are organizing the community to replant mangroves in their shorelines. Other barangay officials said that the promulgation of the ordinance came too late since there is hardly any mangrove left to be declared as forests or protected areas. Again, meetings and conversation with fellow fishers were the source of information pertaining to the existence of the law.

Site/ Municipality	Extent of Implementation and Realization of Objectives of Ordinances
II. Agojo, San Andres, Catanduanes	• Municipal Ordinance No. 03 s. 1993. A great majority of the respondents (93%) were aware of the existence of the ordinance. The respondents estimated that about 42% were moderately aware and around 37% were very aware of the type of gears prohibited inside the marine fishery reserve and sanctuary areas. However, 44% of the respondents rated that they were moderately aware of the penalties for violating the said ordinance. It was interesting to note that billboards and the meetings conducted among fishers were the most effective sources of information. • Municipal Ordinance No. 05 s. 1994. A great majority also of the respondents were aware of the ordinance. The respondents estimated that the compliance to the law was about 68% among the fishers who claimed to be the major source of information. Likewise, majority (63%) were moderately aware of the apprehending officials and 44% claimed to be also moderately aware of the penalties for violation. As far as problems observed in implementing the ordinance, some claimed that there exists a “<i>palakasan system</i>” in implementing the said law. • Municipal Ordinance No. 03 s. 1995. A great majority of the respondents (78%) were not aware of the existence of the law. There were reports from some of the respondents that the 60% incentive derived on account of apprehensions made were not given to the fish wardens or Bantay-Dagat. It was also observed that the small fishers apprehended do not have the money to pay the penalties as provided in the ordinance. The extent of compliance in implementing this ordinance was relatively low as what was observed from the responses made. • Municipal Ordinance No. 08 s. 1995. About 51% of the respondents were observed to be unaware of the existence of this ordinance; same was noted that only 31% of the fisherfolks complied with the ordinance. • Municipal Ordinance No. 01 s. 1998. About 49% of the respondents were aware of the ordinance. It was noted that the problems observed in implementing this ordinance is that there are still fisherfolks who transport banned live marine species, like lapu-lapu, lobsters and tropical aquarium fish, which violates the said ordinance.
III. Atulayan, Sangay, Camarines Sur	• Municipal Ordinance No. 93-001. A great majority of the respondents (68%) were aware of the existence of the law. This data was supported by the enumerators’ observation that the biggest group of respondents was either very aware or moderately aware of the provisions of the ordinance. One third of the respondents (29.7%) claimed that they were made aware of this ordinance through conversations with and information passed on to them by their fellow fishers. The same number (29.7%) claimed that they came to know about the ordinance through meetings in the barangay. The fisher folks reported that when the compliance to the ordinance was well monitored by the Bantay Dagat Team, they noted positive results in terms of regeneration of the fishes that were previously no longer observed in the area. However, the fisher folks and the barangay officials lament that the implementation of the ordinance was not sustained. According to the Municipal Fishery Technician, the operation of the Bantay Dagat was discontinued in September 2001 due to lack of funding. • Municipal Ordinance No. 93-003. The survey showed that almost all of the fishers were aware of the existence of the ordinance. This is one ordinance that caught the imagination of the fisher folks and had a high degree of acceptance. On the part of the law enforcers, the ordinance is a vital support to law enforcement, as it will easily identify the place of origin of the offenders given that each barangay was assigned a particular color code. On the part of the fishers, the ordinance provided them security as their boats can be easily returned in case it gets lost or blown offshore during typhoon season. The fact that the municipality provided the paints for the boats during the initial year of implementation was an added incentive for compliance to the ordinance. The Barangay Captain was acknowledged as the primary source of information about the ordinance while information passed on by fellow fishers came second. The fishermen recommended that the municipality again supply them with the paint and the frequency of repainting should at least be every six (6) months. As it is, the fisher folks could not adhere to the color code strictly as they use whatever color of paint is available in town. • Municipal Ordinance No. 93-006. In contrast to Ordinance 93-003, only about one third of the fisher folks surveyed were aware of the existence of this ordinance. More

	than half of them said that the ordinance is not being implemented. During the focused group discussion, the fishers said that while they cannot admit using illegal fishing methods, they concede that some resort to this “faster” means of fishing due to their poverty. Moreover, commercial fishing vessels frequently fish in the area. The fishermen observed that these vessels catch in one day what the ordinary fisherman catches in one month. How will the small fisherman survive? Moreover, the barangay captain said that he is already losing faith in implementing the law because of the very slow grind of the wheels of justice. He cited the case when he had apprehended several violators, which he had reported and turned over to the PNP. The offenders were caught with dynamites in their possession. However, after the investigation, the PNP said that it was not dynamite but sodium nitrate or fertilizers that were confiscated. The barangay captain said that he dared the PNP investigator to ignite the material evidence so that they will know whether each were dynamite or not. The Barangay Captain said that simple folks like him lose faith in the system when persons in higher authority do not show enthusiasm to prosecute the offenders. He further stated that he personally finances his expenses in following up the outcome of these cases but so far no one among those he had apprehended and reported to the PNP had been charged or penalized. • Municipal Ordinance No. 94-005. Less than half of the respondents (45%) said that they are aware of the existence of the ordinance. They could not even pinpoint the location of the artificial reef. As with the other laws, the entry of big fishing boats could not be controlled due to lack of logistic on the part of the law enforcers. According to the Municipal Chief of Police, they have to borrow motorboats to go after the offenders. By that time they get to the location, the illegal fishers had long been gone. Just the simple act of borrowing a boat already alerts the illegal fishers making police patrol efforts ineffective. • 5. Municipal Ordinance NO. 94-007. More than half of the respondents (56%) claimed that they are aware of the existence of this ordinance. However, the problem is not with them but with the commercial fishing boats that perpetually violates the ordinance and frequently fish in municipal waters reserved for the small fishers. The fisher folks request that they will take charge of protecting and preserving the sanctuary, provided that the municipal government does something about the entry of commercial fishing boats in the waters reserved for the small fishers. In fact, several commercial fishing vessels were in the area at the time of the FGD.
IV. Recodo, Cawayan, Masbate	• Municipal Ordinance No. 01 s. 1999. A majority of the respondents (54%) were not aware of the existence of the law. Twenty percent of the respondents (20%) claimed that information regarding the ordinance was disseminated to them by the Barangay Captain as their source. Seven percent (7%) were made aware of this ordinance through conversations with and information passed on to them by their fellow fishers. The same number (7%) claimed that they came to know about the ordinance through meetings in the barangay. The fisher folks lament that there was no compliance of the ordinance and this was noted by the dwindling fish catch and the frequent presence of commercial fishing vessels as observed in the area. The entry of these big fishing boats could not be controlled due to lack of logistics and a firm commitment on the part of the implementers and enforcers. The enumerators also observed that the respondents could not even pinpoint the location of the marine fishery reserve when a map was presented to them during the interview. However, it appears that the issue is the presence of the commercial fishing boats that perpetually violates the ordinance and frequently fish in municipal waters reserved for the small fishers. The fisher folks request that they will take charge of protecting and preserving the sanctuary, provided that the municipal government does something about the entry of commercial fishing boats in the waters reserved for the small fishers. In fact, several commercial fishing vessels were in the area at the time of the survey activity.

Comparative analysis of process involved in municipal ordinance formulation and extent of people's awareness

Comparing the processes adopted, three (3) models were observed with respect to the process of enactment. These models are shown below:



The first model can be considered as a bottom-up approach with a non-government organization (NGO) initiating the move. The lobbying starts at the barangay level in which the research findings and suggested options for policy formulation are presented to the local community and officials. Barangay officials would then take step either by enacting it into an ordinance or pass a resolution seeking support from the municipal officials for the cause and urging for the passage of a city/municipal ordinance to address the issue.

The second model utilized the institutional approach with government regulatory body like the Bureau of Fisheries and Aquatic Resources initiating the move. The lobbying starts from the national government, and enjoins the municipal and barangay levels of government for ordinance formulation and implementation.

The third model is initiated by the municipal legislators showing concern to their municipal waters by protecting it through the enactment of marine-resource related ordinances for LGU implementation.

It was noted that the first and second models achieved the highest degree of awareness among the communities. This can be attributed to the active advocacy among the local populace and eliciting their support for the cause, thereby, generating local

support. It is also worth mentioning that perhaps the active advocacy of an independent institution or entity outside of the Municipality have created awareness among the people, thus, the extending support to the project.

Constraining and facilitating factors in the implementation process.

Facilitating factors

- The initiative from the community to propose regulatory measures in order to conserve community-based resources is seen as a major facilitating factor. Since the need to have the laws passed was an outcome of community awareness, its promulgation into a local law was simply a formality, and the implementation had the full support of the barangay officials.
- The presence of strong and supportive leadership of the LGU, which took the responsibility to establish the MFR/S or provided the encouraging environment for barangay local community officials to undertake bold steps to elevate their conservation and protection initiatives to the municipal level, and eventually into a municipal wide ordinance.

Constraining factors

- It was observed that the Filipino trait of “pakikisama” or the need to maintain good relationship with kin was a major hindrance in pursuing the objectives of the ordinances. The reality was that it was difficult to impose a penalty on an erring neighbor specially if one is a relative of the enforcing official
- Lack of logistics and budgetary support to the Bantay-Dagat Team
- The BFAR fully delegates the implementation of the marine fishery laws to the municipal government through the Bantay Dagat Team. It is felt that they should have a more active presence in the area of implementation
- Lack of sustained organized community effort to protect the marine resources
- Weak coordination among coastal barangay councils to address the common problem of commercial fishing encroachment to municipal waters
- Lack of logistics and budgetary allocation for the implementation of the ordinance
- Lack of appropriate information and dissemination campaign to inform the fishers about the intent and provisions of the marine-related ordinances
- Absence of appropriate markers in the fishery reserve and sanctuary areas to identify its significance and delineate its boundaries

Conclusions and Recommendations

- Only a very limited number of marine-fishery resource utilization and management ordinances were passed for the past five in the four study areas. Some ordinances were promulgated through the initiative of the barangay officials themselves as a result of research, advocacy and community organizing activities of external institutions. The enactment of these laws followed the command and control principle in environment management, which involves the enactment of a law to bring about a desired behavior and the use of enforcement machinery to get people to obey the law. (Elazagui and Liguton, 2002). The ordinances were the LGUs' response to the need of protecting and conserving their marine resources.
- Formulation of the fishery laws requires not only the initiative of the municipality but the provincial government as well, given that the municipal government has limited resources to monitor the wide area of coverage. The fisherfolks, the barangay council and the members of the Bantay Dagat Team must coordinate and seek the assistance of the provincial government to prevent the entry of commercial fishing vessels in areas where there are reports of intrusion. Through this undertaking, it is hoped that the provincial government shall commit its support and resources to take part in the protection of the marine resources.
- The awareness of the barangays on the importance of MFRS and their participation in passing marine fishery resource-related laws play a significant role in the successful implementation of these laws. It was found out that the barangay fishers are very much willing to cooperate in the implementation of the ordinances even spending their personal funds to attain its objectives. However, there is a need to unify these community efforts into an organized participatory type of law enforcement and monitoring system that will give the community a sense of ownership for the protection and preservation of their own marine resources. This should include a local system of giving due process and imposing of penalty to erring fishers.
- Strategies for information dissemination on the existence of the marine fishery laws should not be limited to meetings, but should include other forms of information campaigns such as billboards, environmental festivals and rural theater. These activities can be done by the Agricultural Technicians (AT) in coordination with academic institutions and NGOs.
- Implementation of the municipal ordinances related to marine fishery resources are sometimes considered as the responsibility of the barangay councils although the law provides for agencies and police participation in the implementation of said ordinances. The awareness of the barangays on the importance of and their participation in passing marine fishery resource related laws play a significant role in the successful implementation of these laws.

- The successful implementation of the ordinances on marine fishery resources depend on the community's recognition about the need for such ordinances
- Community organizing is an indispensable mechanism for formulation and implementation of environment related ordinances or laws and must therefore be considered by local government units in carrying out their law formulation and implementation function.
- Continuous education of community members on the implementation of ordinances on coastal resource management particularly the fishing gears that are allowed within the MFR sites. This is deemed necessary to increase the degree of compliance with the ordinances of the municipality.

Acknowledgement

The support of the Bicol University Fish Biodiversity Team of Faculty Researchers and Research Assistants who assisted in the generation of the data and information is gratefully acknowledged. Due recognition is also given to the local governments of Tabaco City, San Andres, Catanduanes, Sangay, Camarines Sur and Cawayan, Masbate have provided administrative support through their municipal agricultural officers and technicians and assistance in coordinating and mobilizing the communities; and most importantly, to the residents, particularly the various Barangay Councils who were very supportive and provided accommodations to research team.

References

- Albay Provincial Government in Cooperation with Bicol University, 1993. The Present State of Aquamarine Sector in Albay Province. Provincial Development Office, Albay Provincial Government, Albay Province.
- Elazequi, Dulce D. and Liguton, Jennifer T. Setting Quality Standards for Environmental Management Policy: Effective Is It? The Philippine Star, July 1, 2002.
- Lauraya, F. M., et. al. Status of Implementing Marine Fishery Resource-Related Ordinances in Selected Marine and Aquatic Protected Areas in Bicol (The Case of San Miguel Island, Tabaco, Albay). R&D Journal December 1999. Research and Statistics Center, 1999. Bicol University, Legazpi City.
- Mendoza, Antonino B., et. al. Assessment of Marine Fisheries Resources and Sanctuary in Bicol Region., 2000.
- Soliman, V.S., et.al. Assessment and Management of Fishery and Coastal Habitats of San Miguel Island, Tabaco, Albay. R & D Journal December, 1997. Research and Statistics Center, 1997. Bicol University, Legazpi City.
- Lauraya, F. M., et. al. Status of Implementing Marine Fishery Resource-Related Ordinances in a Marine Protected Area: Sangay, Camarines Sur, Bicol, Philippines. R&D Journal December 2001. Research and Development Center, 2001. Bicol University, Legazpi City.

Soliman, V.S., et.al. Assessment of Marine Fishery Reserves in Bicol for Local Government Action Planning. R & D Journal December, 1998. Research and Statistics Center, 1998. Bicol University, Legazpi City.

Politics of Deliberative Democracy and Water Crisis in Eastern Seaboard of Thailand¹

Sarungrut Jumnianpol

Researcher, Chulalongkorn University Social Research Institute (CUSRI), Thailand

Abstract

This article argues that concept of deliberative democracy which emphasizes merely the public use of reason among citizens cannot go beyond the conflict of power and interests in political society. The article examines the possibility and limitation of deliberative democracy in dealing with the water conflict between the industrial and agricultural sectors in the area of the Eastern Seaboard of Thailand. In addition, the article explores roles of different actors that affected deliberative democracy in water management in the crisis. In conclusion, the article indicates the limitations and contributions of deliberative concept of democracy in water governance and proposes the way to improve the condition of deliberative water management in the areas.

Introduction

After ‘deliberative turn of democracy’ in 1990s (Dryzek, 2000: 1), the concept of deliberative democracy become popular throughout the world. The concept has been adapted and further developed by deliberative democrats and local governments in a different way such as citizen’s juries (Crosby and Nethercut, 2005), planning cells (Hendriks, 2005), deliberative polling (Fishkin and Farrar, 2004) and Participatory Budgeting in Porto Alegre, Brazil and South Kerala, India. All of these techniques emphasize on giving equal opportunity for policy stakeholders and ordinary citizens to justify their reasons unconstrained until the collective agreement among different actors in the policy community can be reached. Drawing from these experiences, many scholars conclude that when citizens have got enough information, they could participate in town planning which in turn resulted in better allocation of resources and equitable development in different areas of the country (Fung and Wright, 2003).

As a concept, deliberative democracy aims to increase quality of democracy by encouraging the public use of reason among equal and autonomous citizens. It emerges in the context under which the aggregative or representative model of democracy was criticized as giving insufficient attention to effective participation from ordinary citizens

¹ This article is based on the finding on my Ph.D. dissertation, “Politics of Deliberative Democracy in Development Process: The Case Study of Water Management in Rayong Province” completed at the faculty of Political Science, Chulalongkorn University. I would like to thank M-POWER for financial support, and above all to Assoc.Prof.Dr.Chantana Banpasirichote Wun’gaeo, my supervisor for all her valuable support and guidance throughout the process of doing research.

(Farrelly, 2004: 5). To fill the gap, deliberative democracy proposes a form of decision-making which focus on the communicative processes of opinion and will-formation that precede voting (Chambers, 2003: 308). In the process, it is expected that free and equal citizens could justify their decisions and listen to other reasons and consequently, the acceptable conclusions that are binding on all citizens could be reached (Gutmann and Thompson, 2004: 7). The main assumption of deliberative democracy is that when the citizens could deliberate authentically, without any coercion, their public use of reason could transcend different interests and power in society. Compared with aggregative model of democracy, deliberative democracy has more advantages in terms of the legitimacy of outcome.

Deliberative democrats argue that the concept of deliberative democracy contributes to mainstream democracy in the following ways:

- providing more effective problem-solving procedure that gives equal opportunity to all stakeholders;
- empowering citizens in participatory process which in turn educating citizens and strengthening community; and,
- providing the grounding principle seemingly best congruent with modern ideals that emphasize on publicly autonomous reasoning among equal human agent as a way to develop infinite knowledge (Cooke, 2000).

Deliberative democracy, however, has been criticized in its over-emphasis on the procedure and some forms of reason that lead to consensus. The downside of these is that it might exclude and marginalize some actors (Young, 1999). Moreover, it tends to overlook or pay only a scant attention to the problem of unequal power within political society and irreconcilable conflicts among different actors (Mouffe, 2000). These criticisms are worth considering and in analyzing the practice of deliberative democracy in the real world, we should take into account the political dimension of the unequal distribution of power.

While most literatures in deliberative democracy seek to find the applicability of deliberative democracy in specific settings of public policy decision-making, such as the neighborhood council in Chicago (Fung and Wright, 2003) and the health policy reform in Belfast, UK (Parkinson, 2006), this article intends to examine the possibility and limitation of deliberative democracy in the political setting where unequal power and diverse interests among different actors prevail. Under this circumstance, it is puzzling how deliberative democracy could serve its function.

Water Conflict in Eastern Seaboard: Nature of the Problem

Eastern Seaboard is an industrial development area located in the eastern coast of Thailand. According to the Fifth National Economic and Social Development Plan (Fifth Plan: 1982-1986), three provinces are designated as industrial development areas: Rayong as a center of heavy industrial development (according to Office of Provincial Industrial, Rayong, 2008, there are 5 industrial estates and 1,771 factories) and Chonburi and Chachoengsao as the sites for light industry. Although these three provinces were considered as the potential areas for industrial development, the plan

realized from the outset that in the course of industrial development, water supply in the area could not meet the growing demands of the industrial sector, not to mention the agricultural sector and local residents. In order to increase the water supply, the Royal Thai Government opted for the market mechanism as a new mode of water governance in the region with the hope for increasing efficiency and unity in water management.

In 1992, the RTG had decided to establish the East Water Co.Ltd., a private company, to be responsible for allocation of water in the area. The East Water was granted with 30-year concession to deliver and allocate water in the eastern seaboard area. Under the contract, the Royal Irrigation Department (RID) has to invest in infrastructure and sell water at a fixed price of 0.50 baht per 1cubic meter while the East Water could price their own from 8-10 baht per cubic meter (East Water, 2007). Besides, the East Water is entitled to monopolize water supply in the reservoirs while the people and local administrations around the reservoirs have been excluded. With this, the establishment of the East Water has reinforced the status of the industrial sector as the authorized water user in the area. Based on the statistic on water allocation of RID in 2007, East Water and the industrial sector received 70.55% of the water supply while 29.45% went to the rest (Rayong Irrigation Project, 2007).

Although the participatory water governance has been introduced in Thailand in the form of River Basin Committee (RBC) (OPM Regulation, 2002), in Eastern Seaboard areas, the market mode of water governance seems to be dominant. It is evidenced that the RBC in the area has no real power in determining the water policy direction (Jumnianpol, 2010) and the supremacy of the market mode of water governance is apparent at the time of water crisis. In mid-2005 when the eastern region experienced the severe water shortage, the Thaksin government decided to diversify the water from Rayong river, two natural canals and newly constructed reservoir (Prasae) to supply the industrial sector via the East Water's pipeline system. As a result, between July to September 2005 the local residents and farmers in Rayong Province held 11 protests against the government's inappropriate action. They felt that the government had prioritized the industrial interests over farmers and local resident lives.

After 11 demonstrations and other pressures (policy-networking with the national politicians, independent organization, mass medias, other NGOs network in the region and forming the regional network), the government allowed to establish three groups of joint-committees according to protestors' demand. With an objective of reconciling the conflict in the area, these joint-committees were responsible for making a recommendation on water resource management in their basins (Rayong river Basin; Thabma Sub-basin; Prasae Reservoir Basin) to the governor (OPM order, 2005).

Although these newly created joint-committees bear some resemblances to the RBC regarding their responsibility, they showed more promising sign as a deliberative platform of water governance. These joint-committees have higher proportion of local representatives and have wider coverage of water stakeholders including representatives from agricultural and industrial sectors, local administrations, government officers, NGOs and even ordinary water users in the area. At the time when the RBC was considered as the paper tiger and play virtually no significant roles in regional water management, the joint-committees seemed to be the only active and deliberative platform which all stakeholders can equally participate. It appears that the joint

committees are distinguishable from the RBC in the origin of organization. While the establishment of RBCs can be read as a bureaucratization of water organizations under state governance (Hirsch 2005), the joint committees are a result of the struggles by those who were previously marginalized in the market mode of water governance.

Deliberation in Water Crisis

The establishment of the joint committees seem to reflect the change in regional water governance from market mode toward a deliberative model. But in the end as in the case of the RBC, history repeats itself. Market governance, in close collaboration with state, has been and is still dominant. This is the final destiny of the three joint-committees.

In the case of the joint committees for Rayong river basin and Thabma sub-basin, their operation was short-lived. At the very beginning, it was evident that these two joint-committees were dominated by government officials. The joint committee for Prasae river basin, the composition of representative from local residents, farmers and NGOs, in the other two joint-committees was visibly smaller. Without needed information support from NGOs and academics, the role of representatives from local residents in the joint committees for Rayong and Thabma river basin was utterly trivial. Flooded with technical information and language used by government officials in the joint committee meetings, villagers were automatically turned to be good listeners, not active participants (Cheablaem, 2009). The presence of villagers in the joint committees per se, however, was deemed important in the eyes of government officials as they can claim that decisions made by joint committees have been deliberated or endorsed by major policy stakeholders. In the end, there is no surprise that the operation of the two joint committees in Rayong River, and Thabma Sub-basin was terminated without any actions just because of the coming of the rainy season.

In the case of Prasae reservoir, with stronger support from NGOs and more vibrant movement of farmers and local residents, the joint-committee was expected to generate more fruitful outcomes and impacts. At first it seemed so. Before the official meeting, network of local communities and NGOs organized community meetings to prepare their agenda. During the meeting, apart from having representative in the joint-committee, villagers and NGOs also gathered to observe the meetings.

The outcome of the meetings is disseminated through the municipal voice line and community radios. In addition to the vibrant movement in the local level, the community, in collaboration with network of protesters in other two basins and NGOs, tried to bring the local problem into public attention by appealing to the Senate, National Human Rights Commission (NHRC) and National Economic and Social Advisory Board (NESAC). Apart from the deliberative means, the community also used its intrinsic strength, i.e. forming collective action, to insert more pressure to the government and to call for public attention and support (Patibat, 2009; Atchasai, 2010). A series of demonstrations were regularly held in both local and national levels.

At the joint committee meetings, the network of communities and NGOs tried to raise their concerns of the unequal access to water which prioritized industrial sector over the rest. They had demanded a guarantee from the government that the farmers and local residents would have adequate water. If the government would like to diversify the common water for private use, it should come with acceptable trade-off. After five rounds of tense negotiation by the communities and government, the end result was the collaborative MOU signed between community and the Governor. According to the MOU, the communities allowed diversion of overflow water and construction of the Prasae-Klongyai reservoir linkage pipeline and they would get community infrastructure and social development program in return. As one may foresee, while the construction of linkage pipeline is nearly complete, there is still no concrete infrastructure and social development program undertaken.

In essence, three observations can be made from the experiment of deliberative water governance in Eastern Seaboard. First, by establishing the joint committees, the government did not mean to make a structural change in the mode of water governance in the region. It appears that the real motivation of the government was to buy time and to soften the dissidents' demands without addressing the root cause of the problem that is the unjust water governance. In the case of the joint committees for Rayong and Thabma basin, the government officials skillfully used their superiority in technical knowledge to manipulate meeting agenda. The deliberative policy platform, thus, turned to be the public information forum where villagers came to voice their demands and listen to the government policy (Khaisang, 2009). In the case of Prasae reservoir where the network of dissents was strongest, the government was quite successful to buy time and secure the dissidents' accommodation in exchange of the seemingly empty promise.

Second, the major lesson learned from the joint-committees for Rayong and Thabma river basin is that in order to create a meaningful deliberative policy platform, it is necessary to pay attention to the capacity building of participants especially on enhancing information and knowledge. Probably, the most credible actor who can fill this gap is NGOs or academics. The case of the joint committee for Prasae reservoir reveals that with the information supply from NGOs and academics, villagers are on the playing field with government officials.

Finally, even in the deliberative forum where reason should reign and be the only rule of the game, power actually still matters. For such a powerless actor as villager, the most lethal weapon is obviously the collective action such as public demonstrations and various forms of protests. As evidenced in the case of Prasae reservoir, the coalition of dissents had competently used weapons of the weak to help reduce power advantages of government officials (Fung and Wright, 2003).

Conclusion

In studying the deliberative democracy in the real world, most scholars have usually focused on some cases that reveal how deliberation might work. The objective of this paper is to put the other way around by asking how and why deliberation might not work. The test case of this paper is water governance in Eastern Seaboard, the area where the deliberation experiment experienced repeated failures. The major obstacle of deliberative policy platform in this area lies in the existing market-cum-state mode of water governance of which the foremost rationale is to supply water by any means to the mega industrial estate. This is the reason why the common water has always been diverted to the industrial area and why the water conflict erupted. After being pressured by the coalition of dissents, the government turned to the deliberation policy platform. Unfortunately, it seemed that the government deliberately uses the deliberation forum in an attempt to buy time not to improve the quality of the ill water governance. Consequently, deliberation can be possible only in the form but not in the substance.

References

- Atchasai, Suthi. The Eastern People Network Coordinator. Interview. May 24, 2010.
- Chambers, Simone. 2003. Deliberative Democratic Theory. Annual Review of Political Science. 6 (2003): 307-326.
- Cheablaem, Kwanraun. The Joint-Committees on Water Management in Thabma Sub-basin. Interview. November 17, 2009.
- Cooke, Maeve. 2000. Five Arguments for Deliberative Democracy. Political Studies 48: 947-969.
- Crosby, Ned and Nethercut, Doug. 2005. Citizens Juries: Creating a Trustworthy Voice of the People. in Gastil, John and Levine, Peter. ed. The Deliberative Democracy Handbook: Strategies for Effective Civic Engagement in Twenty-First Century. pp. 111-119. San Francisco: John Wiley & Sons, Inc.
- Hendriks, Carolyn M. 2004. Consensus Conferences and Planning Cells: Lay Citizen Deliberations. in Gastil, John and Levine, Peter. ed. The Deliberative Democracy Handbook: Strategies for Effective Civic Engagement in Twenty-First Century. pp. 80-110. San Francisco: John Wiley & Sons, Inc.
- Dryzek, John S. 2000. Deliberative Democracy and Beyond: Liberals, Critics, Contestations. Oxford: Oxford University Press.
- EAST WATER. 2008. Annual Report 2007. [online] available from <http://www.eastwater.com/investor.asp?smenuid=57&shmenuid=&nlevel=1>[access on August 4]
- Farrelly, Collin. 2004. An Introduction to Contemporary Political Theory. London: Sage.
- Fishkin, James and Farrar, Cynthia. 2005. Deliberative Polling: From Experiment to Community Resource. in Gastil, John and Levine, Peter. eds. The Deliberative Democracy Handbook: Strategies for Effective Civic Engagement in the Twenty-First Century. pp. 68-79. San Francisco: Jossey-Bass.
- Fung, Archon and Wright, Erik Olin. 2003a. Thinking about Empowered Participatory Governance. in Deepening Democracy. pp. 3-42. London: Verso.

- [illegible]

Living Across Border: The Tactics of Everyday Life Practice of Cambodian-Lao Migrant Worker in Thailand in the Context of Mekong Regionalization of Development

Chainarong Sretthachau, PhD.

Faculty of Humanities and Social Sciences

Maharakham University, Kantarawichai, Maharakham 44150, Thailand

Freeriver1@gmail.com

Abstract

This paper analyzes the tactics of everyday life practice of migrant workers from Cambodian-Lao borderland in Thailand in the context of Mekong regionalization of development. The methodology applied the concepts of tactics of everyday life practice and minor transnationalism. Based on multi-sited ethnography research, this paper found that state powers at the borderland, consumption of transnational media, and family play an important role in impelling villagers from the Cambodian-Lao borderland to migrate to Thailand. While living in Thailand, migrant workers need to develop and adapt themselves by applying "flexible identities", collaborating with their employers to avoid the state victimization despite exploitation, creating a social network, consuming the modernity attached to Thai-ness and creating a virtual reality via mobile phones. They also serve as agency when they go back to their homeland. This paper argues that the concepts of tactic of everyday life practice and minor transnationalism are alternatives for studying a subordinated class in context of globalization.

Introduction

Appadurai (2000) suggested that "deterritorialization" which means the nation-state degradation explains the social changes in the context of the globalization and the characteristics of transnationalism about the connectedness and the flow that occurred since 1980s.

The connectedness and the unstructured flow are major concepts implied by most scholars. Those studies explained that the power of the state at the border is decreased or ambiguous. Siriphon (2008: 8-9) explains that under Asian free market, the power of the state at Yunnan-Myanmar borders has decreased, making the border ambiguous and the people are able to create a culture to negotiate with the dominant culture.

At the same time, the scholars criticized the explanation of transnationalism which is mentioned above. Ong (1999) explains that the connectedness and flow have structure. Ong connects the strategy of transnationalism and governmentality which are the practices of the state, capital and family that managed the flow of people and the capital. In addition, Ong mentions that the state has roles in developing the condition in controlling transnationalism. At the same time, "flexible citizenship" was developed for capital accumulation. Smith and Guarnizo (1998) suggested that there is "transnationalism from above" of Appadurai and "transnationalism from below." The

core idea of this concept is in the context of transnationalism, that the state must face the pressure from above and below.

Lately, Lionnet and Shih (2005) argued that transnationalism has been divided into two opposites; "domination" and "resistance", which looks at transnationalism either "utopia" or "dystopia", and suggested that the concept of minor transnationalism is in between. Besides, they criticized that the concept of Appadurai is post-national, while the concept of Ong is nomadic for those who escaped from the control of the state and the territorial border while the minority is waiting for the rights to have full citizenship. The minor transnationalism gives importance to the diverse relationship with the state and they believe that this concept would be useful to explain the culture of minority. Lionnet and Shih (2005) suggest that transnationalism leads to resistant site. The importance of the idea is, the emphasis on the reflection of the perspective from below and explains that before the concept of everyday practice of de Certeau (1984), the concept of everyday form of resistance of Scott (1976) or the concept of the weapons of the weak of Scott (1985) are reflected on the perspective from below, though the contexts global and local were not explained clearly.

I see that transnationalism has less meaning because the scholars ignored the dimension of power relations. Besides, in the past, the scholars had different concepts of transnationalism, especially the tactics of negotiation and everyday practice. Walker (1999) explains negotiation of traders who cross the border of Thai, while Lao and Ong (1999) discusses the everyday life of members of the family who invested in United States. But I observed that the scholars did not discuss the different concepts which scholars annex to transnationalism. Also, they do not reflect the perspective from below because those scholars are not focused on subordinate class, but on traders and business sector only.

In this paper, I would like to imply the concept of tactics of everyday practice of de Certeau and minor transnationalism to explain the livelihoods of the subordinate class. This will give importance in the analysis of power relation between different groups. The concept of everyday life practice which de Certeau developed from the outline of the theory of practice of Bourdieu (1977) explained the significant practice and divided the practice into two perspectives, namely: "strategy" and "tactics". Strategy means the space of power such as businessmen, army, city, etc., which is able to control the other side like the customers or competitors, enemies, and rural areas around the city. The reasons of science, politics and army are created from these strategies, while "tactic" is the thing that is opposite and means the space of the other and the "art of the weak".

I would like to apply these concepts explaining the livelihood of fishermen from Cambodia who migrated to work as illegal wage laborers in Thailand. I conducted my field work in 2008 and the beginning of 2009 by using the multi-sited ethnography. The study was conducted in *Baan Hansa* which is an island in the Mekong at Cambodian-Lao border. I followed the people from the village that migrated to work as laborers in several places in Thailand, visiting them when they were arrested by the Thai officers, helping them to escape from their employers, and following them when they go back to the border and their homeland. From this method, I had a chance to observe and

interview them, their relatives, employers and Thai state officers.

Cambodian-Lao Border in the Context of Mekong Regionalization of Development

Before 1992, Cambodian-Lao border is similar to the borderlands in Cambodia, where people were living so far from the central state. The livelihood of the people is similar to those people in the other borderlands in the Mekong region, which are diasporas. This resulted in the establishment of the borderline among nations in this region in the middle of 20th century. For people in *Ban Hansa*, I have found that the Cambodian state is not seen as an important area. People in the village call themselves as "Lao" and not Cambodians even if they are citizens of Cambodia, because their social memory is related to Lao. They also have the legend which is connected to That Phanom Pagoda located in NE Thailand. In everyday practice, they always move across the border to visit their friends and relatives and join festivities and ceremonies that are organized in Lao.

While they live on the Mekong island, their livelihood is land-based production such as rice farming, growing vegetable along the beach in dry season, and fishing just for household consumption or exchange for rice. The village has undergone great changes when Cambodian government embraced neo-liberalism and joined the Greater Mekong Subregion (GMS). To comply with this policy, the Cambodian-Lao border was opened to connect Cambodia with Lao and the regional market. Under this regime, fish has become an important commodity. Fish are exported to Lao P.D.R. and Thailand. At the same time, people in *Ban Hansa* changed their livelihood from farming to fishing. However, the Cambodian government introduced the "commercial fishing lot system" to the Mekong area in 1995-1999, which called for the re-definition of means the borderland. This resulted in the exclusion of the people from fishing resources. In 1999, the Cambodian government also initiated the resource conservation by declaring the Mekong at the border as "International Ramsar Site" and the Mekong dolphin conservation site, so local fishermen were banned from fishing. These policies defined the borderland as "a production area" and/or "conservation area".

After the fish crisis in 2005, I found that some villagers in *Ban Hansa* started to migrate to the other provinces in Cambodia and Lao, P.D.R. to find new jobs. After learning about the labor market opportunities, they started to migrate to Thailand. The major reason for migration is to find alternative livelihood. In 2007, more villagers started moving to Thailand, representing about 25 percent of the total village.

I also found that the adults who have migrated to Thailand were influenced by the Thai culture through the television programs. They considered Thailand as an "imagined world". The parents forced their children to migrate to Thailand to work. Thus, migration is influenced by the increasing state power at the borders, consumption of transnational media, and the financial need of the family.

Practices in crossing the border from Cambodia to Thailand

All villagers in *Ban Hansa* cross the border from Cambodia to Thailand via Southern Lao and need to pay about US\$150 to the Lao and Thai human traffickers. From an interview with a migrant worker, I found that most of them were illegal immigrants and had no work permits. Also, some villagers need to sell fishing boats or cattle. Most of them also borrowed money from their Thai employers, after which; the payment is deducted from their wages. Most of the migrants have experienced human trafficking, such that they worked as lowest wage-laborer in palm oil and pineapple plantation in northern part of Southern Thailand.

When crossing the border back to their homeland, these migrant workers would cross the Thai-Lao border and they would claim that they are "Lao" citizens. From Lao, they would go to the Lao-Cambodia border and cross to Cambodia by boat to escape from the Cambodian officers. The migrant workers depend on the middlemen for their remittances from Thailand to Lao and Cambodian-Lao border. These middle men used to be traders at the border. They turned their business to money allocation after Cambodia and Lao joined GMS.

These findings indicate that villagers in *Ban Hansa* migrated to Thailand using their "flexible identity". Some of them have become victims of human trafficking. While people at the border adopt their own system in the money remittance similar to the commercial bank, the system is based on moral economy rather than market economy.

Thai state, employer and negotiation of migrant workers

After the six countries in the Mekong region established the GMS, which is supported by Asian Development Bank (ADB), Thailand has become the center of regional market in the labor trade. This is because Thai prefers wage labor, particularly for the "3D jobs": dirty, difficult, and dangerous works. Thus, the establishment of GMS is perceived as "deterritorialization", which enabled Thailand to exploit laborers from Burma, Lao and Cambodia, who easily cross the border to Thailand.

At the same time, the Thai Government developed the state policy which disenfranchises the migrant workers, such as allowing them to register and provide work permits, but most migrant workers are still undocumented. While the Thai government has declared a new Migrant Worker Law and Anti-Human Trafficking Law in 2008, a high-ranking officer mentioned that the officers do not comply with the law. The Thai government has also a special cabinet resolution that allows the officers to deport the illegal migrant workers to their countries without jail sentence except when the person is arrested for the second time.

The migrant workers from *Ban Hansa* had no work permits and they could only work in Thailand by paying the state officers via their employers. In some cases, the employer does not pay all the dues and so the migrant worker needs to connive with the Thai employer to avoid arrest. One employer mentioned that it is not easy for officers to arrest the migrant workers from *Ban Hansa* because most of them look like Thais and

could also speak Thai. The officers could hardly distinguish the Thai from Khmer-Lao because of relatively the same features. During my field work, I had a chance to visit some migrant workers who were arrested by the officers. One respondent stated that that he has changed his name to avoid the second arrest. He also said that he is Laotian so that the officer could send him to Thai-Lao border. As such, he would be able to go back to his homeland via Lao P.D.R. Because he can speak Laotian, the Thai officers could send him to Laos, though he is a Cambodian citizen.

This information reveals that the Thai government implements policies that control the proliferation of migrant workers in Thailand. The migrant workers need to adapt to these policies using their "flexible identity"; negotiating with the state officers; and, collaborating with their employers to avoid arrest.

Following the migrant workers from *Ban Hansa*, I found that most of them wanted to work as hostess in restaurants which they think would be better than other kind of jobs such as laborers in factory, farm or construction work. But in reality, workers in restaurant need to work 14-16 hours/day even if they are young and earns only US\$ 80-90 per month. If workers are not treated so well by Thai employers, their tactic is to escape from their employers.

Everyday life practice of migrant workers

Despite the "not-so-good" conditions of the migrant workers in Thailand, I found out during the fieldwork that all migrant workers had already been modernized. They were using high-end mobile phones already. Mobile phone is an important gadget to be able to communicate with their families in Cambodia; to take photos; and for entertainment.

Moreover, there were many teenage migrant workers who spend their time at salons even if they would spend one-third of their salary. They also adapt to the life style of Thai celebrities. They wear modern clothes and put on make up. In other words, the migrant workers were able to adapt to the culture and lifestyle in Thailand.

Practice of migrant worker when they go back to their homeland

When I followed the migrant workers back to their homeland, I found that they wear modern clothes particularly during first two to three days after their arrival. They would bring mobile phone with them as they go around the village. The villagers and the migrant workers perceived that the mobile phones from Thailand are "genuine". Many male workers also wear Buddha amulet from Thailand. The migrant workers had also their own stories about their journey to Thailand. Surprisingly, however, they would not dwell on the problems that they have encountered in Thailand. Instead, they would tell about the nice things that happened to them in Thailand

Conclusion

The tactics of everyday life practices of de Certeau and the concept of minor transnationalism reveal that the people living at the border of Cambodian-Lao who crossed the border to Thailand is the result of the state's re-definition of the borderland. The establishment of the GMS has excluded the local people to gain access to the natural resources that serve as their source of livelihoods. They have also imbibed the culture of Thailand from transnational media, and at the same time, were pressured by the family to migrate and work in Thailand. These indicate that the nation-state, transnationalism and family influenced the people at the Cambodian-Lao border to cross to Thailand even by illegal means. Therefore, in understanding the livelihood of migrant workers, one should think about the relationship between labor and structure (nation-state, transnational media, and family in case of child labor). This suggestion is in accordance with the minor transnationalism as explained by Lionnet and Shih (2005).

This case study revealed that the illegal migrant workers from the Cambodian-Lao border are confronted with a number of problems and issues such as the control of Thai state, exploitation from the Thai employer, lowest wage labor, and state of loneliness being far from the homeland. In these conditions, migrant workers create diverse tactics by adapting to the new environment using their "flexible identity". For example, a Khmer-Lao would take Thai NE identity and Lao identity to cross the border and live in Thailand. They would cooperate with their employer so that they would be able to hide their identity from the Thai officers. They would escape to find a new job which has become normal tactic for illegal worker. They could create phone network among their own Khmer-Lao and Southern Laotian. This means that they create a virtual reality which crosses the physical and ethnic border.

While they are underpaid (being the lowest-paid wage laborers), their practice of their everyday life does not reflect such. They have modern mobile phones and gadgets. They also imitate Thai celebrities. These practices reflect the idea of consuming modernity of their new home, which is Thailand, and their homeland, which is Cambodia...

Monitoring the migrant workers, I could clearly see that these workers would go back to the border and after 5-6 months work in Thailand and would return to Thailand, which reflects the life of people living across the border. People have the roles in cultural transformation. They cross the border; they would bring modern culture from Thailand to their homeland. I find this concept similar to the work of Panyakaew (n.d.) which explained the Dai monks in Sipsongpanna who migrated to Thailand went back to their homeland and took Thai pop music with them and they have their role in re-inventing Dai culture.

As "agency", their practices also reflect their relationship with migrant workers from Southern Lao in Thailand. Building good relationship with the "middleman" who remits the money from Thailand to the Cambodian-Lao border is necessary. They also try to maintain good relationship with their employer even though they are exploited. They do this for their own security.

These findings point out that everyday life practice of the migrant workers is not tied with one culture over another culture because they have to adapt to the culture of Thailand in order to survive.

Comparing the findings above with the concept of everyday forms of resistance by Scott (1976) and weapons of the weak by Scott (1985), we can clearly see the different tactics of this group. They are not only resistant or passive to the exploiter such as peasant (Scott) and do not express their identity, gender control, and consuming culture.

With these findings, I argue that the concept of minor transnationalism as a means to tap livelihood opportunities for the subordinate group is a new phenomenon that is better than the concept of everyday forms of resistance and weapons of the weak by Scott. The subordinate groups should not be perceived as weak.

References

- Amporn Jirattikorn. 2007. *Living on both sides of the border: Transnational migrant, pop music and nation of the Shan in Thailand*. Chiang Mai : Regional Center for Social Science and Sustainable Development (RCSD), Faculty of Social Sciences, Chiang Mai University.
- Appadurai, Arjun. 2000. *Modernity at large : Cultural dimensions of globalization*. Minnesota : Minnesota University Press.
- Aranya Siriphon. 2008. *Weaving the Tai social world: the process of translocality and alternative Modernities along the Yunnan-Burma border*. Doctor of Philosophy of Social Science, Graduate School, Chiang Mai University.
- Bourdieu, Pierre. 1977. *Outline of a theory of practice*. (Nice, Richard, Trans.) Cambridge: Cambridge University.
- de Certeau, Micheal. 1984. *The practice of everyday life* (Rendall, Steven, Trans.). Berkeley: University of California Press.
- Lionnet, Francoise and Shumei Shih. 2005. *Minor transnationalism*. Durham and London: Duke University Press.
- Ong, Aihwa. 1999. *Flexible citizenship: The cultural logics of transnationality*. Durham and London: Duke University Press.
- Scott, James C. 1976. *The moral economy of the peasant: Rebellion and subsistence in Southeast Asia*. New Haven and London: Yale University Press.
- Scott, James C. 1985. *Weapons of the weak : Everyday forms of peasant resistance*. New Haven and London: Yale University Press.
- Smith, Micheal Peter and Guarnizo, Luis Eduardo. (Eds.), 1998. *Transnationalism from below. Comparative Urban and Community Research V6-1998*. New Brunswick: Transaction Publishers.
- Walker, Andrew. 1999. *The legend of the golden boat: Regulation, trade and traders in the borderlands of Laos, Thailand, China and Burma*. Surrey: Curzon.

Living Across Border: The Tactics of Everyday Life Practice of Cambodian-Lao Migrant Worker in Thailand in the Context of Mekong Regionalization of Development

Wasan Panyagaew. n.d. *Moving Dai: Moving stories from the upper Mekong region*. Canberra: The Australian National University.

The Role of Traditional Land Use Systems in the Well-being of Rural Timor-Leste

Pedro Damião de Sousa Henriques
CEFAGE and Department of Economics
University of Évora - Portugal
pdamiao@uevora.pt

Vanda Narciso
Independent research
Portugal
vandanarciso@gmail.com

Abstract

Natural ecosystems and traditional land use systems have an important role in the life and well-being of the rural population of Timor-Leste. Land, the support of natural ecosystems and subsistence agriculture of rural populations of Timor Leste, is the main focus of this research. The objectives are: 1) to identify the different land use patterns of Timor-Leste; 2) to identify the goods and services produced; and, 3) to relate the goods and services produced by land use patterns with the well-being of Timor-Leste rural population. This paper is based on a multidisciplinary approach incorporating contributions from several fields of knowledge, and uses documentary sources, field observations and interviews conducted in 2003, 2009 and 2010. The main land use patterns in Timor-Leste are: natural and semi-natural ecosystems, subsistence agriculture, sacred, housing, basic infrastructures and industries and services. These land use patterns produce a set of goods and services classified as supporting, provisioning, regulating and cultural which are essential for the survival and well-being of Timor-Leste rural communities.

Key-words: Timor-Leste, land use patterns, ecosystems goods and services, well-being.

Introduction

Land and water are the main supporters of almost every ecosystem in earth, either natural or semi-natural, including the traditional land use systems developed by the human being. The multidimensionality of the services supplied by different land uses are essential resources for the majority of the population of the developing countries. Besides the economic value associated with those services, land services have also historical, cultural and sacred values that should not be ignored once, over time, they have shaped the social organization of communities. Land, as the most important natural resource, should not be analysed isolated but in its natural, social, economic and cultural context.

Ecosystems goods and services are the benefits provided by ecosystems that contribute to make human life both possible and worth living. These include the products and the services that are used and valued by human societies such as food, cultural services, nutrients and water cycling, soil formation and retention, resistance against invasive species, pollination of plants and regulation of climate. The Millennium Ecosystems Assessment (MEA) aggregates them in four categories: provisioning, regulating, cultural and supporting (MEA 2003).

Humans influence and are influenced by ecosystems through complex and multiple interacting pathways, existing an inextricable linkage between natural systems and human well-being. Human well-being refers to everything important to peoples' lives, ranging from basic elements required for human survival (food, water, shelter) to the highest level achievement of personal goals and spiritual fulfilment. According to the MEA, the components of human well-being are security, basic material for a good life, health and good and social relations. These four elements contribute to an ultimate well-being benefit of "Freedom of choice and action", or "development as freedom" in Amartya Sen words (MEA 2003).

The conceptual framework adopted by the MEA has at its core human well-being and poverty reduction, both dependent upon the conservation and sustainable use of earth ecosystems and key to achieve all eight Millennium Development Goals (MDG). People without minimum standards of well-being, are generally the most vulnerable to the deterioration of natural systems because they are more directly dependent on the resources and services provided by ecosystems.

Timor-Leste had an estimated population of 994,500 in 2005 of which about half were female and two thirds were less than 25 years old. The population is growing rapidly and the fertility rate (7 children per woman) is nearly the highest in the world. Life expectancy is low, infant mortality is high, utilisation rates of health services are low, and school repeat and dropout rates are high. Demographic projections, indicate that the Timorese population should increase by one-third by 2015 from its initial 2005 value, by four-fifths by 2025, and triple by 2050 (World Bank 2008).

The population is distributed in 2,300 villages and divided into 34 ethno linguistic groups. The majority of the population lives in rural areas (73.5 per cent) draws its livelihood from subsistence agriculture and have a low standard of living. Timor-Leste society is mainly organised in a patriarchal, patrilineal and patrilocal clan system. The social order is very marked by cosmology and its dual nature in which a sophisticated exchanging system plays a central role (Traube 1986, Fox 1980 and others). Since the majority of the population lives in rural areas, land is fundamental to meet basic needs and is central to livelihood strategies. The achievement of the eight MDG in Timor-Leste depends heavily on healthy ecosystems and sustainable management of land.

The main purpose of this paper is to identify the main land use patterns of Timor-Leste, to describe the flow of goods and services produced and to relate these with the well-being of the population.

Land use patterns in Timor-Leste

The land use patterns in Timor-Leste are profoundly marked by the topography of the territory, its geological origin, weather conditions and by human influence. From an ecological point of view, land occupation in Timor can be divided in the following categories: mountainous areas; highland plains; moist lowland areas (along the southern coast); arid lowland areas (along the northern coast); marine and coastal areas; and, urban areas (RDTL 2005a).

Table 1. Land use areas in Timor-Leste by category

Land uses	Area (in hectares)	%
Forest land		
Lowland	761,486	51.0
Highland, coastal & other	92,768	6.2
Agricultural land		
Estate crops	74,578	5.0
Food & other	336,400	22.5
Non-productive land	203,152	13.6
Cities, towns villages	19,934	1.3
Lakes	5,080	0.3
Total	1,493,398	100.0

Source: RDTL 2005a

Data available collected in the nineties (Table 1), and possibly outdated nowadays, shows that forest land plus non-productive land plus lakes account for more than 71.1% of the total area of the country, agricultural land occupies around 27.5% and urban areas only 1.3% (RDTL 2005a; RDTL 2005c). The vast majority of agricultural land is used for traditional agriculture, which forms the basis of livelihood of most rural households in Timor-Leste. The area of estate crops is mainly dominated by the coffee plantations of arabica in the highlands and robusta in lowlands and coconut trees.

From an anthropogenic view point, each of the land use patterns observed not only corresponds to different uses given by the population but also to different intensities of human manipulation of the original ecosystems. The principal modification in Timor-Leste land use patterns due to the Portuguese presence or colonization was the intensive exploitation of sandalwood until its almost extinction at the end of the nineteenth century. Sandal extinction in terms of natural regeneration coincided with the introduction of coffee production. The Indonesian occupation of the territory in 1975 was characterized by a dramatic deforestation, principally of sandalwood trees preserved until 1975 and of other commercial timber species.

The main land use patterns and its most common uses that were considered relevant to analyze the relation between the set of goods services produced and the well-being of the people of Timor Leste are in Table 2. The first two types of land use pattern occupy the majority of the land of Timor-Leste. The natural and semi-natural ecosystems land pattern is utilized for primary and secondary forests, streams and lakes and coastal areas, while the land pattern of subsistence agriculture includes land for staple food crops, cash crops, livestock and fish ponds.

Table 2. Land use patterns in Timor-Leste.

Land use patterns	Uses
Natural and semi-natural ecosystems	Primary and secondary forests, streams and lakes and coastal areas
Subsistence agriculture	Staple food crops, cash crops, natural pastures, livestock and fish ponds
Sacred	Sacred houses, altars, forests and water sources
Housing	Urban and rural housing
Basic infrastructures	Churches, schools, hospitals, roads and public services
Industries and services	Industrial and commercial activities

The third type, sacred land, used for sacred houses, altars, forests and water sources, is very important in Timor-Leste in terms of the intangible good that is produced. Land for housing provides shelter which sharply influences the level of well-being of the households. On the same line of thought is the land use for basic infrastructure, such as churches, schools, hospitals, roads and public services.

Services of land use patterns and the well-being of rural Timor-Leste

The functions or services of land use patterns are the capacity of each land use to provide, directly or indirectly, goods and services that satisfy human needs. These goods and services are aggregated in this study in four categories: provisioning, regulating, cultural and supporting, all contributing to the well-being of rural populations in the dimensions of security, basic material for good life, health, good social relations and freedom of choice and action (MEA 2003).

Natural and semi natural

Natural and semi natural land use pattern includes the following land uses: primary and secondary forests, streams and lakes and coastal areas. As shown in Table 1, more than half of Timor-Leste (57.5 %) is covered by natural and semi natural ecosystems, mainly forests in lowland (51%), forests in highland, coastal and other areas (6.2%) and lakes (0.3 %) in a total of 859,334 hectares. The estimates of the area of primary forest are around 1.4 % of total area (Reis 2000). In the past, Timor-Leste was well-endowed with natural forests and in the middle age was known by Portuguese navigators that arrived to its coasts as the land of sandalwood. The 16th century Portuguese poet that chanted the Portuguese epopee of maritime discoveries, Luis de Camões, wrote in his master piece of poetry “Lusiadas”

Ali também Timor que o lenho manda
Sândalo salúífero e cheiroso

Over there is Timor, where the forest of
Salutary and scented sandal reigns
(Camões, Canto X, 134)

In those times when the population was lower, shifting cultivation in the forests was the traditional and a sustainable land management system. With the increased population and the exploitation of its forests during the colonial and occupation periods, the area of forests has been reduced in its extent and in its condition, partly through clearing for agricultural purposes and partly through uncontrolled timber harvesting. As Timor-Leste is an island, the coastal areas are important in social and economic terms. The fragile coastal ecosystems include the coral reefs, seaweed and sea grass beds, beaches and seashores. The seashores include the beach forests of mangrove and also river and lakes estuaries. The available information suggests that the coastal resources are largely unspoiled, compared to other countries in the region and that eastern littoral area lies within the Coral Triangle, an area with the greatest biodiversity of coral and reef fish in the world (BirdLife International 2010).

Natural and semi natural ecosystems contain several species of palm trees, eight species of bamboo, four species of rattan and are house for reptiles (crocodiles, snakes and lizards), mammals (deer, wild pigs, cusus and monkeys) and birds species (lorikeets, land and sea eagles and pigeons). Some of these fauna species are endangered and one of them is a lorikeet (*Philemon inornatus*) a colourful parrot, once very common in the Timorese forests. At least 17 of the wild species are commonly hunted such as deer (*Rusa timorensis*), wild pig (*Pork sp*), wild buffalo (*Bos savanicus*), cuscus (*Phalanger orientalis*), and laco (*Paradoxurus hermaphrodites* or mussanga). Hunting is practiced throughout the year and uses traditional methods such as spear, dog, bow and arrow and trap (NDFWR 2004 and Gusmão 2003).

Timor-Leste forests produce a set of direct goods and services that have been harvested by its population since remote times and a set of indirect services. The most important product is timber from various species: sandalwood, redwood, red cedar, teak and white and black eucalyptus. Regarding non-timber products, the most important are fuel wood, rattan, bamboo, palm tree building materials, medicinal plants, honey, bee wax, palm flour, palm wine, wild fruits and plants (betel nuts, mushrooms, tamarinds, roots, tubers, sprouts, leaves and flowers), and animals for meat (deer, monkeys, birds, marsupials), materials for handicrafts and jewellery, fodder for animals and fertilizers to agriculture. The main products and services produced by the coastal areas ecosystems are fish and aquatic pants and recreational activities connected to diving. The majority of the fish captures are made with traditional fishing techniques and canoes and are an important source of protein and income for coastal communities. All these products are included in the provisioning function.

The relevant indirect services supplied by Timor-Leste forests are: protection of watersheds and flood regulation; soil formation, stabilization of soil cover and erosion control; control of waste degradation; water purification and supply of water for domestic consumption and agricultural irrigation; waste treatment; nutrient cycling; primary production; and shelter and nursery for the species of wild fauna and flora of Timor Leste. The beds of rivers and streams provide sand and gravel. All these services are mostly included in the regulating and supporting services.

With respect to the cultural role that the forest plays for the East Timorese, the poem *Velhas Florestas de Agora* (The Old Forests of Nowadays) written by the East Timorese linguist and poet Fernando Sylvan, helps us to understand the cultural values that the East Timorese give to their forests such as aesthetic, spiritual, educational and recreational.

...	...
A paz da casuarina	The peace of casuarinas (beefwood)
A flor do cafeeiro	The coffee flower
...	...
O estilo dos bambus	The bamboo style
Os laços dos cipós	The lassos of lianas
Os ecos dos toqués	The echoes of lizards
O riso dos macacos	The laughter of monkeys
O salto dos veados	The leap of deer
O canto dos loricos	The singing of birds
...	...
As florestas serviam	The forest served
Desde séculos e séculos	For centuries
Como templo sagrado	As a sacred temple
...	...
E ainda servem agora	And it still serves
A heróis guerrilheiros	To warrior heroes
Como templo sagrado	As a sacred temple
De rezar liberdade	To pray for freedom (Sylvan 1981).

For most of the products and services produced by the natural and semi natural ecosystems, the data available to measure the income generated or the quantity of the goods produced is scarce or non-existent. In the past, the most valuable source of income was sandalwood. Sandalwood is used to extract oil that is famous for its fragrance. Nowadays there are few occurrences of sandal which means that the income from sandal is scarce or non-existent. In some areas of Bobanaro, sandal is a sacred tree which has helped, to a certain extent of its preservation. The island of Timor is the center of origin of the sandal tree (*Santalum album*) and an important source of genetic resources and biodiversity that is internationally valued. The other timber species such as redwood (*Sequoia sempervirens*) red cedar (*Juniperus virginiana*) and teak (*Tectona grandis*) are important sources of materials for local manufacturing industries and for exports. Due to lack of transparency of timber markets, domestic market prices are well below international prices, leading to the use of fine timber, with exporting value, for

domestic uses that were better suited with other timber types. Forest, as a supplier of building materials, provides income for households and materials for the family houses.

Forest vegetation is an important source of animal feeding, mulching and organic fertilization contributing to food production. Forest and coastal products provide important materials for the handicraft industry that in certain zones, like Maubara and Ataúro, are important sources of income for the households involved in its production. The beds of streams and rivers supply the building and construction industry with gravel and sand materials through small scale enterprises.

From an economic and social perspective, the recreational and ecotourism services, if properly managed, can be an important source of income for households in the future. Examples already in place are the eco resorts of Com, Ataúro and Jaco Island managed by local communities. The creation of the national park Nino Konis Santana can be considered, an important measure to preserve the old forest reserve of Loré and the coastal ecosystems of Jaco island, and to induce sustainable recreation and ecotourism activities. All the above goods contribute income and/or food for the constituents' well-being called basic material for good life.

Wild plants and honey have been, and are, used to prevent, treat and cure diseases by the population of Timor-Leste. The study of Frei Alberto de São Tomás (1969), Dominican missionary, made in the 18th century titled "Virtues of some plants on the island of Timor" shows the medicinal importance of plants of Timor-Leste for the traditional medicine that is widely practiced by rural communities. This service is included in the health constituent of the well-being.

The cultural services have an important role in the security constituent of the well-being. For example, it has provided in the past, during the times of instability and fight against Indonesia, the places for refuge of the warrior heroes as suggested by Fernando Sylvan in his poem (Sylvan 1981). But it also contributed to the constituent of good social relations, due to the fact that spiritual, aesthetic, inspirational and educational values transmitted by natural and semi natural ecosystems can make an important contribution to the social and character development of human beings.

From the indirect services that forests perform, the most important in the short run is water supply for domestic consumption and agricultural irrigation. Both of these services have significant contributions to the constituents' well-being basic material for good life. Another important indirect service is the waste treatment performed by natural and semi-natural ecosystems once the majority of the country waste is left in the hands of nature to be treated. Regarding the other indirect services described above, they all contribute directly or indirectly to the well-being of the constituents particularly security, because it will ensure access to natural resources in the future and will prevent the occurrence of disasters.

Subsistence Agriculture

Subsistence agriculture uses land to produce crop, livestock, and fishing activities. The most important food crops are coffee, maize, rice, cassava, beans, peas, peanuts, coconut, candlenut, cocoa, vanilla, sisal, fruits (banana, papaya, orange, mangoes, pineapple, tangerine, avocado, water melon), vegetables (tomatoes, onions, pumpkins, cucumber, chu-chu), and root crops (sweet potatoes, yams.) With exception of rice and coffee, all the other crops are produced by the majority of the households. The most important food crops are maize and cassava while the cash crops are mainly coffee and rice. Besides providing food supply for the households, vegetables and fruits cultivated in the home garden, are often an important source of occasional income.

Majority of rural households own some livestock. The most important livestock species are chickens and pigs in more than 70% of the households. Sheep production is done by only 4.1% of the households and 11.3% raise buffalos while horses, cattle and goats account for around 20% of the households.

The agricultural activities from subsistence agriculture provide provisioning services through the production of food and fibre that are mainly for family consumption with the surpluses being sold at local markets. However, some agricultural activities directly related with natural and semi natural ecosystems, supply fuel wood through the pruning of coffee and other trees, and are a source of genetic resources especially that many of the species used are already adapted to the region. During the first half of the 20th century, a fluke of nature created a hybrid that resulted to an unlikely cross between the arabica and robusta coffee species.

Subsistence agriculture is the main contributor to the well-being of the rural populations of Timor-Leste either in terms of food supply for own family consumption or cash income. Food production for self consumption helps to satisfy a sufficient diet while cash income creates conditions for access to manufactured and other goods such as radios and services such as higher education for the children. The main sources of cash income are coffee, rice, vanilla and livestock and in a lesser extent the surpluses generated by fruits and vegetables activities. As the East Timorese coffee technician Mario Tavares defends, subsistence agriculture is also an important source of fuel wood for household consumption and for selling. Thus, a significant contribution to farm income and to satisfy fuel domestic needs (Tavares 2010). All these goods contribute decisively to the well-being of the constituents called basic material for good life.

For majority of the households, animals are valuable assets acting as a sort of monetary reserve, to help offset a crisis, to provide education for children and fulfill social obligations of families such as weddings and funerals. This last task has an important role on the good social relation constituent. Both create conditions for families to have an adequate livelihood and contribute decisively for their freedom of choice and action. Subsistence agriculture and food production highly depend on the favourable weather conditions for agriculture, determining the proportion of population that is food insecure and highly vulnerable to food insecurity. With good weather conditions for agriculture, the amount of available food can be enough to feed the

household but the proportion between the different components of diet is not balanced. Food insecurity and inadequate diet are threats to the ability to be adequately nourished and thus to the health constituent of the well-being.

Food and cash income contribute also to reduce the vulnerability of the population to shocks and stresses, while the forestry system of coffee production contributes to reduce ecological disasters, both playing a role on the security constituent of the well-being. The technologies used by subsistence agriculture are traditional with low use of inputs or improved seeds, fertilizers and plant protection products for crops, or concentrated foods and drugs for animals. Consequently, the productivity is low, as well as the income generated, which have a direct effect in the well-being of rural populations of Timor-Leste.

Sacred land

One of the principal land use patterns observed in Timor-Leste, due to its value to the populations, is what we designate as sacred land use pattern, i.e. the *lulic* occupation of land. The concept of *lulic* which means holy or sacred is a force that can be simultaneously and paradoxically dangerous or favourable. For most of the East Timorese, land is the core of all spirituality and this relationship is central to the issues that are of great significance to daily life.

Sacred areas may vary from a few trees to a mountain range, and their boundaries may not be fixed. Ground considered as *lulic* is presented all over the country. However, there is no estimate of the area of *lulic* land. These spaces are characterised by their cultural status as sacred, taboos associated, rules of behaviour and local communities' rules of management. The sacred spaces/grounds have different uses such as sacred houses, land, forest, grooves, trees and water and altars associate with them, and there are also totemic species of animals and plants particularly trees.

Sacred sites have significant economic, social and cultural value among local communities. They contribute to the regulating and provision of services, but, more importantly, they provide goods for ritual and cultural purposes. Cultural services can be considered as the major contribution of the sacred land use pattern to the well-being, among other reasons, because they have no easy substitutes, especially for rural and poor communities. The cultural services provide key elements that serve as the founding pillars of the cosmology and of the traditional society features such as land tenure, management rules of natural resources, marriage and settlement patterns.

The "sacred house" represents the most important piece of the Timorese social structure, thus it and is the focal point of all life. All members of one lineage are linked to one sacred house. Marriage and *barlaque* (bride's wealth or dowry) also play a central role in the complex system of family alliances that form the structure of Timorese society. In Timor Leste, two kinship systems coexist. These are patrilineal and matrilineal, which are associated with two rules of residence, patrilocality and matrilocality, corresponding to two systems of land inheritance. In most rural areas, the patrilineal system dominates, where land is passed according to the male line and only

for sons. There are no more than 12% matrilineal communities that belong to Bunak and Tetun-Terik, where land is transferred through the female line.

Customary land tenure is heavily dependent on the societal systems (matrilineal x patrilineal) and on settling pattern after marriages (matrilocal x patrilocal). The majority of land is communitarian, owned and managed by communities according to customary law based on rules of social and cultural behaviour. Within the management rules of natural resources, *tara bandu* is an important customary law recognized as traditional ecological wisdom according to Demetrio do Amaral de Carvalho from Haburas Foundation. It involves a kind of agreement within a community to protect a special area for a period of time, usually prohibits the use of certain places as sacred areas, but is not exclusively applicable to sacred sites (Carvalho 2004).

The customary systems, including customary land tenure, remain alive and strong, showing its high degree of resilience. All features of social organisations in Timor-Leste are inextricably linked to the cosmology and the cosmology, in turn, is inextricably linked to the perception that land is sacred. Furthermore, the sacred land use pattern produces, among others, a wide range of cultural services, less tangible than material services, which contribute to people's quality of life including: identity/sense of place/feelings of "being at home"; spiritual and religious values and enrichment; knowledge system and learning, education, and scientific opportunities; and aesthetic enjoyment and leisure and recreation. Such services are highly valued by all communities in Timor-Leste and examples are:

- The "affiliation" to a specific sacred house and its territory;
- The cultural diversity produced by the dynamic interaction between topography, biological diversity and people leading to more than 30 ethnic groups dispersed in this half of tinny island;
- The traditional knowledge associated with sacred sites has been passed down from the ancestors and is learned through a process of initiation in order to gain a progressive understanding of customary law and is also an opportunity to learn about land uses, agricultural practice and land tenure rules;
- Many places as forests, mountains and other particular landscapes have been protected and avoided from degradation and destruction due to the fact they are sacred.

Within the framework of sacred land use, special attention should be paid to the sacred houses, *uma lulic*. As Trindade said "The importance of the *uma lulik* in relation to the people of Timor Leste cannot be overstated. The sacred house embodies the ethos of communal unity and the binding relationships between the people, the land and their ancestry..." (Castro 2007:38). Timorese sacred houses which represent important social spaces and local cosmologies, link extended families and are the prerequisite and guarantee of the "flow of life". Therefore, sacred houses are a key piece of all cultural services provided by land.

Houses are pivotal to social organisation. They represent the social hierarchies and define marriage systems and forms of ritual exchange that reproduce Timorese society, including patterns of political leadership and power. McWilliam (2005) stresses the cultural significance of these houses as repositories of knowledge representing the moral order of society and its role as “houses of origin and alliance” and illustrates this idea with the case of clandestine resistance structures. Besides the social cohesion, house affiliation is very important to secure resource access and ensure personal safety.

The rebuilding of sacred houses (many of them burnt in 1999) and the ceremonial rituals around it, which are practices that re-enforce the legitimacy of ancestral spirits, should be stressed. These reconstructions require a huge effort of all members of the house. All household members must contribute goods, like animals, rice or even cash, absorb resources and time. Reconstructions are also one of the few socially-accepted reasons for selling the land. The reconstruction of sacred houses is a prerequisite and symbol of collective post conflict identity work and can play a key role in the peace-building process. On the other hand, these and other rituals are means of recognizing the marks left by years of conflict and a way to overcome the traumas of Indonesian occupation and freedom fight, and thus improve mental health of people.

The ceremonies which take place in any sacred place are for the well-being of the local community ensuring the fertility of their crops and livestock, and providing protection and spiritual assistance for constituent households. Agricultural crops are the embodiment of ancestors and farming rituals are held throughout different cultivation phases. To be able to express their faith and values, they perform their traditional ceremonies in public demonstrations, which increase the feeling of security and reduces people’s vulnerability and also act as tool to empower the people.

Sacred places are closely linked to the security and good social relations constituents of well-being. Traditional practices linked to land services play an important role in developing social capital and enhancing social well-being, e.g. the loss of important ceremonies contributes to the weakening of social relations in a community. On the other hand, affiliation with an *uma lulic* is a safety network, e.g. ensuring access to natural resources. Sacred places also provide a basic material for a good life, such as food and water necessary to the livelihoods of local people.

Regarding the health constituents of well-being, sacred land makes its contribution through the provisioning services as food production and plants used in popular medicine and regulating services, including those that influence the distribution of disease. Cultural services play also an important role through the contribution of recreational and spiritual benefits to the physical and mental health.

All these elements have important contributions to an ultimate well-being benefit of “freedom of choice and action”, even when they seem contradictory to it. Protecting sacred places in Timor-Leste is necessary for the strength of its culture, and could have a fundamental impact in its cultural identity and status as sovereign nation.

Housing

Land provides a suitable substrate for infrastructures, including housing. Housing satisfies people's fundamental need for shelter and satisfies other human needs. It is a place where individuals can enjoy privacy, sleep, eat and keep possessions. The housing category provides space for urban and rural housing with different shapes, dimensions and materials. As shown by Cinatti et al. (1987) Timor-Leste traditional housing architecture is very rich in terms of design and materials and provides individuals with a key means for expressing their identity (Figure 1).

The Census 2004 reveals that about 1.3 percent of all land in Timor-Leste is classified as urban. In 2004, just over 206,000 people, 22.3 percent of the population, lived in urban areas with Dili accounting for over 80% of it.

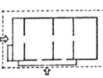
SINAIS	REGIÃO	PLANTAS E ALÇADOS		ALTITUDE
	BOBONARO			MONTANHIA
	MAUBISSE			MONTANHIA
	BAUCAU			COLINAS PLANALTO
	LAUTEM			COLINAS PLANALTO
	VIQUEQUE			PLANÍCIE
	SUAI			PLANÍCIE
	OCUSSI			PLANÍCIE

Figure 1 – Main profiles of Timor-Leste traditional houses

Source: Cinatti et al. 1987

There are many aspects of housing that are associated with individual well-being, among them, whether or not occupants own their home and housing conditions. Housing conditions are generally poor and there are huge disparities in access to services between urban and rural areas. About 50% of houses in urban areas have access to piped water supply, 58% to a private toilet and 74% to an electricity supply. Corresponding figures in rural areas are significantly lower, 40%, 14% and 10% percent, respectively.

The housing use of land contributes to the basic material for a good life through the provision of living space, ranging from isolated houses to large urban areas. Housing is closely linked to the security and to the basic material for good life constituents of well-being. Regarding security it is worth note that every human being has a right to adequate housing: “right of all to a secure place to live in peace and dignity” (CESCR) which is also part of the basic material for good life. Housing is also linked with the health component since poor housing conditions have a direct relationship with health problems such as mental illness, accidents, and respiratory diseases. This last one is very common in Timor Leste due to inadequate house cooking conditions.

Conclusion

Land performs a crucial role in the development of rural areas in Timor-Leste and leads the path to achieve a higher level of well-being. The diversity and complexity of the cultural matrix has been determinant for the patterns of land use observed in the country. This paper highlighted some of the relationships between land use patterns and well-being of Timor Leste population, through the identification of services supplied by land uses and their contributions for the constituents of well-being. The main land use patterns in Timor-Leste are natural and semi-natural ecosystems, subsistence agriculture, sacred, housing and basic infrastructures and industries and services.

Due to cosmology and heavy dependence to natural resources, the people of Timor-Leste have established a very close and holistic relationship with nature, which provides them with essential goods and services such as water, land, food, firewood, building materials and spiritual enrichment. Thus, land provides to the population not only economics benefits but also important cultural services and plays a central role within families' and communities' well-being. People in Timor-Leste are poor, and poor people are the most vulnerable and severely affected when the environment is degraded or their access to natural resources, namely land, is limited or denied. This research recognizes the essential role that land performs in the development of rural areas of Timor-Leste and the importance of focusing and keeping in mind that many of the goods and services supporting peoples' well-being, have a public or common pool good nature, thus without a market value and not subject to commodification. This fact should be considered when elaborating, adopting and implementing policies and laws. In sum, as shown above all the networking between land uses, land services and constituents of well-being are interconnected and contribute to the ultimate well-being benefit of "Freedom of choice and action".

Acknowledgment

The authors would like to thank to the people of Timor-Leste who share their lives and thoughts with them.

References

- BirdLife, International. 2010. In Timor-Leste, in 2007, three IBAs were linked and protected as the first National Park. Presented as part of the BirdLife State of the world's birds website. Available from: http://www.biodiversityinfo.org/casestudy.php?r=response_&id=231, Checked: 11th April 2010.
- Carvalho, Demétrio do Amaral. 2004. Demetrio do Amaral de Carvalho champions East Timor's environment, Goldman Environmental Prize 2004. Available from http://www.gr_ist.org/article/nijhuis-carvalho/ Checked: 11th April 2010.
- Castro, Jose 'Josh' Trindade Bryant. 2007. Rethinking Timorese Identity as a Peacebuilding Strategy: The Lorosa'e – Loromonu Conflict from a Traditional Perspective. The European Union's Rapid Reaction Mechanism Programme Technical Assistance to the National Dialogue Process in Timor-Leste.

- CESCR, General Comment 4; UNHCHR, The right to adequate housing (Art.11 (1)): 13/12/91. CESCR General comment 4.
- Cinatti, Ruy, Leopoldo de Almeida and Sousa Mendes. 1987. *A Arquitectura Timorense*, Lisboa: Instituto de Investigação Científica Tropical /Museu de Etnologia.
- Fox, James (ed.). 1980. *The Flow of Life: Essays on Eastern Indonesia*, Harvard University Press, Cambridge.
- Gusmão, Marçal. 2003. Soil conservation strategies and policies for East Timor, Project submitted for partial fulfilment of the requirements for the degree of Master of Soil Management and Conservation.
- McWilliam, Andrew. 2005. "Houses of Resistance in East Timor: Structuring Sociality in the New Nation", *Anthropological Forum*, 15(1): pp. 27-44.
- Millennium Ecosystem Assessment. 2003. *Assessment: Ecosystems and Human Well-being: A Framework for Assessment*, Island Press.
- NDFWR (National Directorate of Forestry and Water Resources). 2004. *Policy and Strategy Forestry and Watershed subsector*, Ministry of Agriculture, Forestry and Fisheries (MAFF), Díli.
- Narciso, Vanda and Pedro Henriques. 2008. 'Gender and Development: the Role of Women and its Relation with Land in East Timor', paper presented at European Association for Evolutionary Political Economy Annual Conference, Labour, Institutions and Growth in a Global Knowledge Economy". Rome, November 2008.
- RDTL. 2005a. *Natural resources and Environment: Priorities and Proposed Sector Investment Program*, Several Ministries, Díli.
- RDTL. 2005b. *Housing and Urban Development, Priorities and Proposed Sector Investment Program*, Ministry of Transport, Communication and Public Works, Díli.
- RDTL. 2005c. *Agriculture, Forestry and Fisheries, Priorities and Proposed Sector Investment Program*, Several Ministries, Ministry of Agriculture Forestry and Fisheries, Díli.
- Reis, Luís Manuel Moreira da Silva. 2000. *Timor-Leste, 1953–1975: O desenvolvimento agrícola na última fase da colonização portuguesa*, Tese de mestrado em Produção Agrícola Tropical, Universidade Técnica de Lisboa, Instituto Superior de Agronomia, Lisboa.
- São Tomás, Frei Alberto de. 1969. *Virtudes de Algumas Plantas da Ilha de Timor*, Ministério do Ultramar, Lisboa.
- Sylvan, Fernando. 1981. *Cantogrito Maubere*, Livraria Ler, Lisboa.
- Tavares, Mário. 2010. *The Timor-Leste coffee production*, Personal interview conducted in Díli and Ermera.
- Traube, Elizabeth. 1986. *Cosmology and Social Life: Ritual Exchange among the Mambai of East Timor*, University of Chicago Press, Chicago.

UNDP. 2006. Timor-Leste Human Development Report 2006- The Path out of Poverty, Díli, Timor-Leste.

World Bank. 2003. Timor-Leste, Poverty Assessment - Poverty in a New Nation: Analysis for Action, Dili, Timor-Leste: World Bank.

World Bank. 2008. Policy note on population growth and its implications in Timor-Leste. The World Bank Washington, D.C..

The Roles of Communities in Rural Development: Potentials of Community-Based Approach in Nepal

Kazuko Tatsumi

Extension Center, Yamaguchi University, Japan
tatsumi@yamaguchi-u.ac.jp

Narendra Mangal Joshi

Professionals for Development, Nepal
mjoshifamily@yahoo.com

Abstract

Policy makers are always concerned with the approaches of rural development in developing countries like Nepal. They have a long tradition of debating about the role of state, market and local community-based institutions for the sustainable rural development through the balancing of the criteria of choice between economic efficiency, social equity, and environmental sustainability in the context of globalization. Recently, the community-based approach is getting more popular and government policies towards rural development focus more on it.

With this background, this paper reviews the rural development policy of Nepal. It examines how the approach of community involvement was introduced in rural development policies in Nepal. In doing so, it examines how the community gets involved and what makes successful involvement of community in rural development and how the communities affect rural development through the geographical comparison between mountain and hill villages, functional comparison between community forest user group and financial groups and time comparison between 2000 and 2010. In doing so, this paper defines “community” in terms of local contexts and determines the roles of communities on rural development of Nepal. In study villages, the forest user groups and financial groups which are based on communities are sustainable and they are becoming more inclusive (socially equitable) in term of participation, leadership and benefit sharing as an influence of national and international inclusive policy. The study concludes that understanding each community’s social and cultural aspects supports rural development and community-based approach is important for rural development.

Keywords: rural development, community-based approach, social equity, comparative studies, Nepal

Introduction

Policy makers are always concerned with the approaches of rural development in developing countries like Nepal. They have a long tradition of debating about the role of state, market and local community-based approaches for the sustainable rural development through the balancing of choice between economic efficiency, social equity, and environmental sustainability in the context of globalization. Recently, the community-based approach is getting more popular and government policies towards rural development focus more on it. However, a number of questions are continuously being raised: “what is community?” “What is community development?” “What type of community development approach sustains and has a positive impact on community”?

This paper reviews the rural development approach in the two communities in Nepal. It examines how those two communities get involved, how they encourage, how successful is the communities’ involvement, and how the communities affect the rural development. The analysis centered on the geographical comparison between mountain and hill villages, and functional comparison between community forest user groups (CFUGs) and financial groups (FGs). On the basis of the study, the definition of community has been reviewed on the basis of peoples’ membership in villages and regions.

Methodology

The analysis of the outcome is based on the data collected during the fieldwork from 2000 to present. The fieldwork was carried out in a village level in two districts: the Lalitpur district in the hill region, and the Rasuwa district in the mountain region, to examine the differences between two villages. The study used a multi-stage random sampling in the selection of households. During the first stage, all-households survey was conducted to find out the general socioeconomic characteristics of the study areas, such as caste and ethnicity. Then, a small-sample survey was done to find out the detailed information on outcome variables related to community relationships. In the financial analysis, the main variables include the rate and quality of participation, and local leadership in communities. Other variables like coordination among the institutions, transparency, independency, social welfare, empowerment and health were also used to examine the overall social change within the communities over ten years.

Review of Rural Development and Community Based Approach in Nepal

Human society has been changing continuously from the very beginning of human history. The changes have constructed a development which is a continuous process. Definition and understanding of development depends on the perception of people. People’s perception is also based on their orientation, experiences and expectations. The concept of rural development is a process of development and change to improve rural social life. It is a strategy designed to improve the socioeconomic conditions of the rural poor. As such, it involves extending the benefits of development to the poorest in the rural areas (e.g. small farmers, tenants, landless and other disadvantaged groups). It involves helping the poorest among those who seek a livelihood in the rural area to

demand and control more of the benefits of rural development. During the beginning of development interventions in rural areas, the strategy mainly focuses either on market-based as advocated by The World Bank (1975) or state-owned as generally advocated by central government. According to The World Bank (1975), the goal of rural development cannot be achieved without available infrastructure development, commercialization of agriculture, proper utilization and mobilization of resources and social development through private sector participation.

The process of modern development in Nepal started after 1950 when family-based political system called 'Rana Rule' ended, and the country entered into a democratic system through the influence of people's movement and politics of the outside world. Development planning started in the country in 1955-56 to bring change in the underdeveloped rural condition. Ten Plans have already been completed and an interim three-year plan is running at present. Satisfactory results in the history of the overall process of planning and development are yet to be achieved in Nepal.

The Government of Nepal has tried to adopt several different rural development approaches for the development of rural areas after 1950s. The first rural development program in Nepal was the Tribhuvan Village Development Program, which mainly focused on the development of agriculture, road, drinking water, education and health through the effort of central government. Development programs in rural community were introduced by the initiation of Block Development Officer (Adhikari, 1982). Panchayet Development Program was established in the decade of 1960s which had three main objectives - institutional development, social mobilization and attitudinal change - for development and change through the participation of Village Panchayet (Current Village Development Committee). This was the beginning of local level participation through local government in rural development.

Similarly, different integrated rural development programs have been conducted since the decade of 1970s and continued later giving priority on saving, roads, training, health, agriculture, rural industry, nutrition etc. Different rural development programs like Rural Infrastructure Work, Rural Infrastructure Development Program, Agricultural Road Program, Rural Access Program, District Road Support Program, Poverty Alleviation Project, Remote and Specific Area Development Program, Periodic District Development Plan have been implemented till the Ninth five year plan for the development of rural sector specifically. Obviously, the success of rural development in Nepal has few achievements compared to its inputs. Most of the integrated rural development programs in Nepal have faced problems because of irrelevance to the target groups and lack of people ownership in the program.

During the late 1970s, the role of local people has been more emphasized. Different studies have proved that the local people participation is important for the success and sustainability of rural development programs. Esman and Uphoff (1984) have mentioned that rural people can enhance their individual interest and collective well-being by catalyzing the opportunities to organize, and when they organize, they formulate their own rules, thus generating local approaches, if they are given the right to devise their own institutions without being challenged by external authorities. They

would enforce the rules themselves and this in turn would permit the development of their own internal governance mechanisms and formulas that would effectively allocate costs and benefits to the members by managing local resources effectively, ultimately leading to the development of rural communities. This process led toward the community-based approach.

Considering the importance of community-based approach, the government of Nepal has also introduced different plans and policies to institutionalize the local community through local people's participation. Officially, the credit cooperative for farmers that allowed them to form local farmers groups at the local level to disburse micro-finance was the first such program introduced by government during 1970s. Later, many other programs were initiated, for example, Small Farmer Development Program (SFDP) that forms local farmers' groups to deliver services and information, and micro-finance to develop agriculture in rural areas.

The local people's participation was emphasized after the democratic movement in 1990. The community-based approach was more emphasized after introducing Decentralization Act 1992. A number of non-government organizations (NGOs) started to form and operate at the national and local levels. The government, along with international donor agencies, has chosen the NGOs as main partner-organizations to ensure local people's participation and develop the sense of ownership. The NGOs started to form local groups which later turned into local community based organizations (CBOs) and/ or groups. Currently, there are thousands of community-based organizations operating under community-based approach policy in different sectors e.g. vegetable marketing, milk producing and marketing, saving and credit, irrigation management, and so on in different programs.

In the forestry sector, it was officially introduced in 1988 through the Master Plan of Forest Sector, which emphasizes Community Forestry Program that forms Community Forest Users Group (CFUG) to manage the forest resources. Forest Acts 1992 and Forest Rules 1995 have legalized this plan. In rural finance sector it is introduced as SFDP.

The policy of government has not changed much in following five-year plans. For example, Number Eight, Nine, Ten five-year plans and the current three-year plan has also emphasized local people's participation and promoted community based approach in rural development.

It is difficult to isolate benefits achieved through rural development programs during those periods but it is noticed that the approaches of local people's participation have been different in different periods of time and different locations, as well. The process of change/development in community-based approaches has been neglected by development practitioners as well as by social scientist. As a result the programs were not successful as expected during that period of time.

After the introduction of community-based approach, in most cases, the development intervention has been introduced by the formation of groups at the local level. After continued interaction and consultation, those groups turn into a kind of community with its own characteristics and functions. The success of those community-based approaches depended on the characteristics of those newly-formed communities and approaches used to form new communities within established communities. The following section examines how the people get involved, how they are encouraged, how successful involvement happened, and how the successful community is formed that affect the rural development through the geographical comparison between mountain and hill villages, and functional comparison between community forest user groups (CFUGs) and financial groups (FGs); and in one decade from 2000 till now. Chapter 3 and 4 provides case study of Community Forest Users Group (CFUG) in hill district and Rural Finance Group in Mountain district respectively.

Case Study of Community Forest Users Group (CFUG)

Historically, the natural resources, especially, land and forests, are providing vital resources in the livelihood of Nepalese people. Forest plays a vital role in maintaining ecological balance, and promoting economic development. Different institutional arrangements have been operating in forest resource management in Nepal. Among them, Community-Based Forest Resource Management by forming Community Forest Users' Group is one of the main strategies in managing government-owned forest areas that are accessible to the villagers.

A number of studies have mentioned that community-based forest management is one successful example of forest conservation in Nepal (Gilmour and Fisher 1991). Recent studies have also mentioned that the CFUG have positively contributed to the rural community development along with successful conservation (Joshi and Maharjan 2005). But not all the CFUG are successful in conservation and contribute rural development. This case study examines what types of CFUG are successful in conservation, and how they contribute in rural development. In doing so, it examines different social phenomena mainly how communities are formed and how people get involved, what characteristics make successful communities in CFUG.

Dal Choki village is in a hill district located near the capital city Kathmandu. It is very remote even being near Kathmandu. The administrative zone of the district has been divided into Village Development Committee (VDC) and VDC has been divided into Wards. Normally, the societies have their mutual relation at ward and village level. But mutual relation for the CFUG is not concerted at ward level. There are four CFUGs operating in village as shown in figure below, indicated by A1, B1, C1 and D1 community.

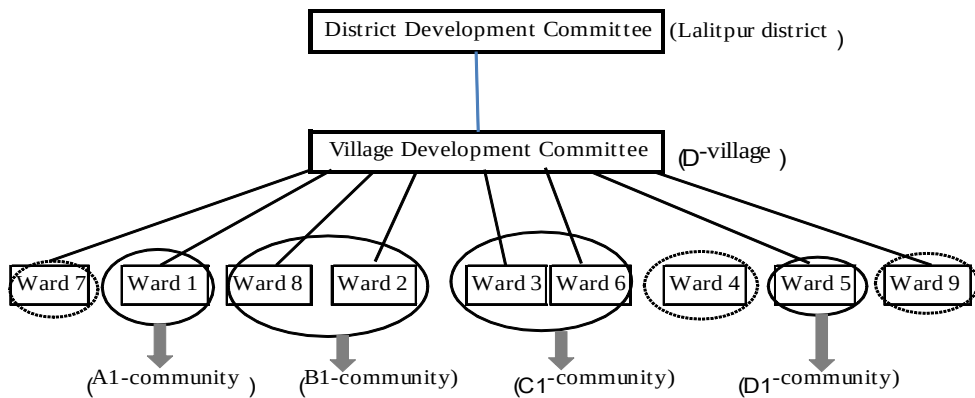


Figure 1: Community and ward in the study village - Dal Choki

The CFUGs at community B1 and C1 were formed in the same period in 1995-96. They were formed through the initial intervention from District Forest Office (DFO) with support from donors and NGOs. The DFO staffs and NGOs visited the communities and formed the CFUG. Initial intervention was done through the NGOs participation. It is taken as “induced community-based approach”. The formation of these CFUGs for these communities was not self motivated. The members in these communities are also from different ethnic groups with different socio-economic backgrounds. The priority for the conservation and dependency on forest also varies within the members vastly. Some members of the B1 and C1 community have private forests. The cultural understanding within the members of the community is different since the members are from tribal races like Tamang, Magar, Bahun and Nagarkoti as well.

A CFUG was formed in community A1 by themselves. There was no NGO and Donors involved during the initial period of establishment of the CFUG. They were self motivated to manage their only one source of energy. The DFO gave training and other support after the villagers’ request. The members of the CFUG in community A1 are homogenous in the sense of their ethnicity, socio-economic condition and need for the forest resources. All the members are depending upon the government owned forest for daily firewood, fodder and timber. None of the members own private forest land. Their cultural understanding is also the same since all the members are from Tamang community.

The CFUG in D1 community is newly-formed and very few of households are members of CFUG in D1. So it was excluded in the studies.

During the field survey, almost 70% of participants in the survey said that CFUG in A1 community is a success in conservation and management. Similarly, nearly 50% of participants said CFUG in A1 is a success in rural development through CFUG as well. The main reasons for the success of CFUG in A1 community are need for the forest

resource and the past experience of scarcity of forest resources. But this study analyzed the result from the sociological perspective as well.

Table 1 shows the result of the field study on people's perspectives on success of CFUG in different communities on the basis of performance of pass one decade. The chosen variables are involvement/participation, leadership, transparency, contribution to social welfare, empowerment of members, health improvement and improvement in education of members' household. From Table 1 also the CFUG in community A1 is successful as compared to other CFUGs.

Table 1: Success of CFUG in Different Variables Mentioned Below

SN	CFUG in	Involvement	Leadership	Transprancy	Scial Welfare	Empowerment	Health	Education
1	Community A1	4.5	4	4	4.5	3.5	3	4
2	Community B2	3	3	3	3	4	3	3
3	Community C3	2.5	3	2.5	2.5	3	2.5	2.5

Source: Field Survey 2006

Note: 5 is highest ranking and 0 is lowest ranking

One of the major observations during the conduct of the case study in CFUGs is the sense of "connectedness" within the members of the community. This has often generated a 'sense of community'. It was noticed that the stronger the sense of "connectedness", the higher is the chance of success in community mobilization and success in purpose of the community based approach. This generates a true community-based approach. To develop strong a sense of "connectedness," there should be some "glue" that holds the community together, and interdependent/mutual support for the common goals. In community A1, there is no alternative to access energy source except for the government-owned forest resource where the community takes the initiative to conserve and utilize sustainably. The community's own initiative to generate this kind of ownership in CFUG benefits the people who have initiated it. The interdependence within the members of the community to conserve and protect their only one source of energy has generated a sense of mutual support at the members' level. In community A1, the CFUG is providing a safety net for household energy for all members. A feeling of belongingness and being able to contribute are important features of the community-based approach. In community A1, the strong sense of community in CFUG is generated also due to the homogenous cultural group of Tamang. The unbiased leadership generated due to continued involvement (participation) of members and strong communal feeling aids the success of CFUG in A1 community.

Whereas, in community B1 and C1, the CFUG was formed through the intervention of the external institutions. As a result, the feeling or sense of ownership was very poor. The members of the CFUG are not culturally homogeneous, which creates a difference in communal feeling and understanding. The feeling of "connectedness" is low in those CFUGs as a result of several alternatives for energy sources as well because nearly 40% of the members have other alternatives for energy. As a result, the feeling of interdependence among the members is low. Overall, it decreases the emotional relationships that exist between members. This defeats the purpose of a community-based approach in CFUG in community B1 and C1.

Case study of Community-based Financial Group

Since 1990s, microfinance has been integrated as one of the poverty alleviation programs in the developing countries. The Second case study village is in the mountain areas (2000-4000 meters above sea level) of Nepal. This village is composed of nine (9) wards. The societies have their mutual relationships at ward level. We focused our analysis on the social phenomena at ward level. However, some villages have the wards combined in paired or tripled units, depending on the geographical terrain of their location.

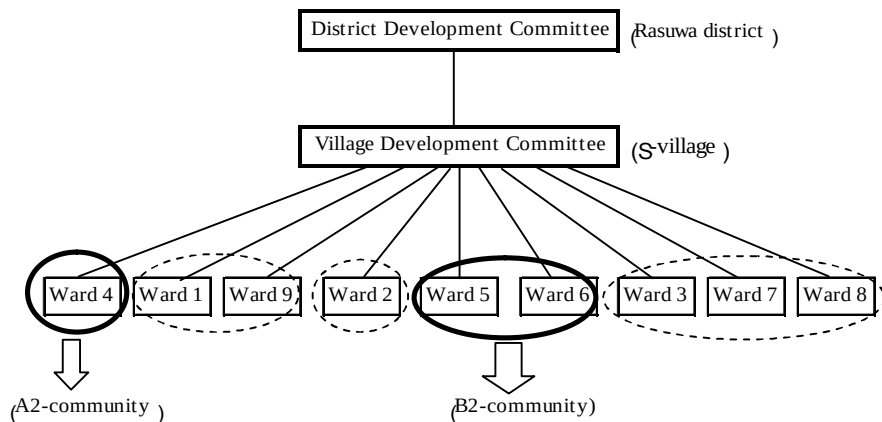


Figure 2: Community and ward in the study village - Syabru

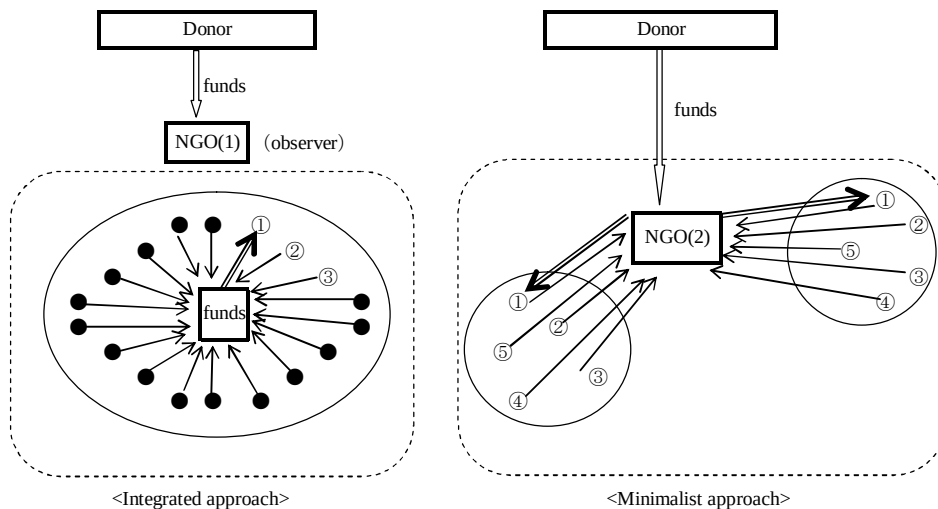


Figure 3: The system of Microfinance

Source: Field Survey 2000

In this village, two NGOs implemented two different types of microfinance, i.e. a minimalist approach (1995-98) and an integrated approach (1998-2000). However the projects were not sustainable because they did not match local needs, and they were externally-managed. The people did not and still do not need small amounts for investment but big amounts for their life events like wedding ceremony, funeral, festival or going abroad to earn money. Moreover, people did not trust the staff of NGOs who dominated them and stole some money from their budget.

Therefore people in A2-community (ward no. 4) where there are only 45 households could create a new system for their own FG since 1991. They got know-how in community-based management through those earlier experiences of two microfinance projects. We named this FG “Community-based Financial Group; CBFG.” The system is similar to the Rotating Saving and Credit Associations (ROSCAs); ROSCAs are groups of individuals who agree to meet for a defined period of time in order to save and borrow together. In S-community especially the FG like ROSCAs is community based. It plays roles as a savings institution but also functions as a mutual-help society with a peer-monitoring mechanism. The auditor is a local monk who is senior-ranked and he is the owner of the only one shop there. They trust him very much. They can use the contributed money for their own household consumption. The CBFG offers an incorporated and integrated approach of financial and social aspects.

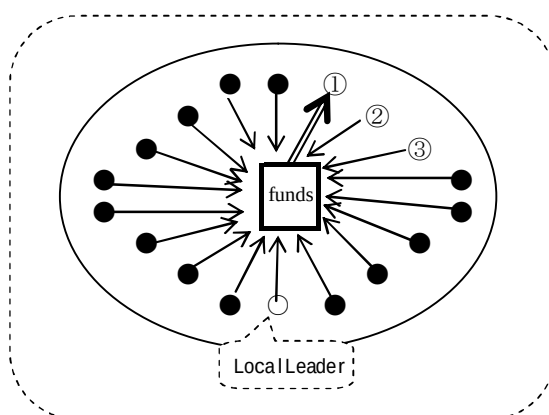
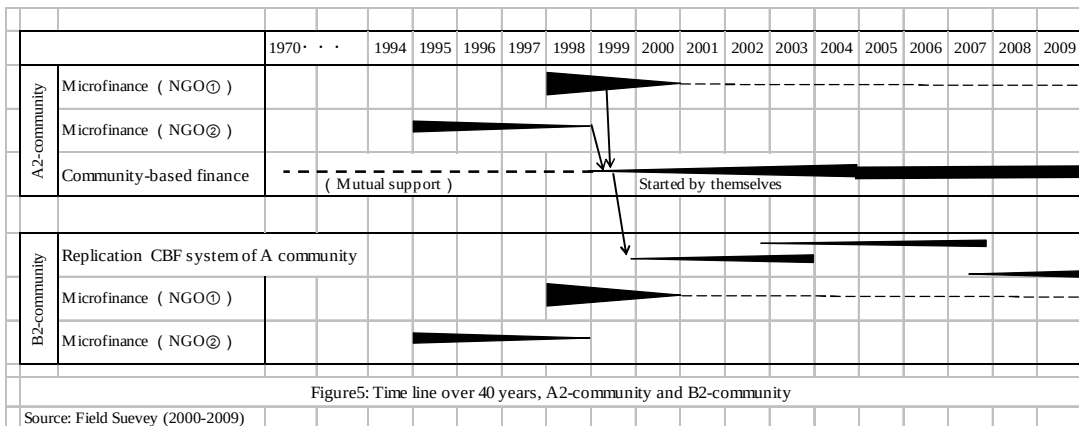


Figure 4: The system of community-based approach in A-community
Source: Field Survey 2000

In B2-community (ward no. 5 and 6) there are 81 households near A2-community about 20 minutes away on foot. They replicated the system of CBFG of A2-community. In B2-community, three groups started a similar financial system. One group finished one cycle. Someone could not repay the fund and so another member supported him. The second group finished two cycles. The auditor is a women's group leader. But she has gone abroad to earn money. The group is not sustainable because of her absence. The last group is working now. Their FGs are not community-based groups but functional groups. There are members from out of the community. These have only financial functions for individual profits like ROSCAs.



In conclusion A2-community and B2-community are undergoing different ways of rural development. The people of A2-community added a new financial function into their mutual support community. The people of B2-community organized a few financial groups. The financial services for rural life in B2-community are specialized. In the case of B2-community's approach (FFGs), it didn't support the ultra-poor and poor people. It is not a safety net for them. Usually functional groups reject unsuitable people. That forces them to remain in the poverty cycle.

Discussion

In case studies, in hill and mountain districts, and in CFUG and CBFUG, the mutual support and feeling of ownership is key to a successful community-based approach. The mutual support and feeling of ownership developed the basis of member's interdependency, and emotional relations which help to develop "connectedness". "Connectedness" is also developed by the source for a safety net. For example, financial safety is developed among the members of community A2 in mountain district and energy safety net is developed among the member of community A1 in hill district. Similarly, cultural homogeneity in the characteristics of group members also plays a vital role. In mountain district, almost all members are from Tamang community. Hence, there is cultural homogeneity. But in Hill district only one community A1 has cultural homogeneity which helps it to be a successful CFUG in hill district. Also during the field survey most replied that the success of CFUG in community A1 is also due to cultural homogeneity. Since all members are Tamang, there is not ethnic Tug-of-war and members understand their ways of doing by following the Tamang culture. But for B1 and C1 community there is ethnic Tug-of-war between Bahun, Tamang and Magar.

Conclusion

On the basis of above case studies, this paper defines "community" in terms of local contexts and examines the pure community-based approach for rural development. In the study, two cases of the CFUGs and CBFUGs (which are based on communities that are sustainable) are becoming successful in terms of greater involvement of members, better leadership, fair benefit sharing and proper management of the resource (financial and forest). The study concludes that (1) policy makers should firstly understand each community's social and cultural situations, then (2) create policies that support rural development, and (3) most rural people realize that a community-based approach is important for rural development. The pure community based approach as are successful due to mutual cooperation and "connectedness" that provides a secure safety net. This study suggests that this type of community approach should influence national and international policy.

References

- Adhikari Shyam Prasad (1982). *Integrated Rural Development in Nepal*. Kathmandu: Sahayogi Press, Nepal
- Esman, M. J. and N. T. Uphoff 1984. *Local organization: Intermediaries in Rural Development*, Ney York: Cornell University Press
- Gilmour D. A. and Fisher RJ 1991. *Villagers, Forests and Foresters*. Sahayogi Press Kathmandu Nepal
- Joshi, Narendra Mangal and K.L Maharjan 2005 " Study on Linkage between Natural Resource Management and Well Being in Nepal: A Entitlement Approach" in Suaiman et.al eds, *New Challenges Facing Asian Agricultural under Globalization*, Volume II, Malaysian Agricultural Economics Association (MAEA) Malaysia.

NPC. 2002. Tenth Plan, 2002-2007. Kathmandu: HMG/Nepal Singha Darbar, Nepal.

Ostrom, E 2000. *Collective Action and Evolution of Institutions for Collective Action*, Cambridge: Cambridge University Press

Panday, Devendra Raj 1999. *Nepal's Failed Development, Reflection on the Modern Mission and the Maladies*. Nepal South Asia Centre.

Robert Chambers. 1983. *Rural Development: Putting the Last First*. Pearson Education Limited.

Developing Database of Folkhealers Towards Economic Development in Phitsanulok, Thailand

Wannisa Susom

Master of Social Development Student on Faculty of Social Sciences
Naresuan University, Thailand
pptt_02@hotmail.com

Abstract

The paper highlights the efforts of the folkhealers to treat the ailments of the local people, and ultimately develop a folk medicine for sociocultural mapping. The study used the anthropological methodology using survey research. The research findings demonstrated that each ailment or disease could be treated by the folk healers using herbs and the magic words. Most of the folk healers were observed to be more than 70 years old.

Considering the old age of the folk healers, it is recommended that a directory of folk healers be developed. A resume of each folk healer must be properly documented. A possibility of developing and distributing Thai folk medicines could be explored in the world market.

Keyword: local wisdom, folk healer, creative economy

Introduction

Generally, the Thai society has established the natural ways of providing health care for each other through social networking. Because health services could not be accessed by everyone, most of the local people have also developed their capacities to provide health care for themselves, their family and other community members. The local health services being provided by the local folkhealer differ in each area ((Group of Thai traditional medicine, Department of Thai Traditional Medicine Development and Alternative Medicine, Ministry of Health, 2004).

Medical folk has been in existence for centuries already. It has been transferred from the ancestors to the succeeding generations. Because of the wealth of experiences, medical folk is still widely being practiced in most of the rural communities in Thailand. The primary objective of medical folk is to provide treatment and health care to the local people.

In the past years, however, the wisdom and practice of medical folk has declined because of science, the lack of policy, advancement of modern medicine and technology, and medical and food supplements from abroad. In the past 3-5 years, the market for food supplement in Thailand has grown up to 12%, particularly in 2009. This market value has reached 3400 million and it is expected to grow an additional up to 9 percent in 2010. (Kasikorn research Center, 2009). Such conditions caused people not

to be self-reliant as this increases the burden of the expense for the country (Nongkran Kanchanaprasert, 2001).

Recently, however, the medical folk tend to be in the limelight again because of the inaccessibility of health services among the local people. In addition, the government in several countries tends to realize the importance of medical folk, and thus, starting to provide support to promote medical folk, as well as increasingly finding ways to integrate medical folk with the modern medicine (Songyot Khamchai, 1998). Simultaneous with these initiatives, however, the Thai government should also establish standard operating procedures for the medical folk to ensure accuracy and reliability of their medical/health services.

Most of the survey results found that most of the folk healers do not have correct medications textbook; and no investigations conducted as regards the treatments for ailments, and therefore, accuracy and reliability are in question. In addition, the survey results indicated that the new generation has not shown any interest in medical folk. Thus, there is a very limited opportunity to promote medical folk at the district or provincial level. The lack of database of medical folks, accurate textbook and exchange of information are the urgent concerns now. In view of these concerns, a study was conducted to assess the need for the establishment of a database of medical folks.

Objectives

- To study the local knowledge on traditional medicine in the city of Phitsanulok, Thailand.
- To create the database for herbal medicines of folk healers
- To formulate policy recommendations for the promotion and sustainability of medical folk towards economic development

Methodology

Using a qualitative research, this study involved the folkhealers who live in the city of Phitsanulok. The sample was chosen using snowball sampling, from the folk healers involved in the traditional Thai medicine group (Tong Lang Temple Group) in Makhamsoong District, Phitsanulok Province. The data were collected through key informant interviews and observation.

Results and Discussion

The research data indicated two major findings: 1) The folkhealers in the city of Phitsanulok have inherited their traditional knowledge in medical folk from their ancestors, and this runs within the family; and 2) Most of the ailments that are commonly being treated in their localities are body aches, back pains, headache, diabetes, and flatulence, among others.

The traditional knowledge and wisdom on medical folk is inherited by the members of the family from their great ancestors, and this knowledge is being passed to from one generation to another, within the family. The people who are folk healers are often have ancestors who are associated with or operated activities about herbs before, such as, used to be traditional healers, folk healers, monk healer who treated the people in the family or relatives before. (Gomart Jueangsatearnsub, 2008).

Other community members, however, learned from the medical folks through direct observation and experiences, particularly in using the herbal/medicinal plants that are being prescribed by the medical folks. The respondents mentioned that they did not undergo any formal studies and training on medical folk, but purely observation and actual experiences. Some medical folks were apprehensive that medical folks could no longer be practiced by the new generation, because of more competitive and comfortable jobs, and modern technologies.

The folkhealers oftentimes make use of herbs in various forms (e.g. liquid, powder, oil, hot compress) to cure and heal various ailments such as body ache, headache, diabetes, and other diseases that are common in the local communities.

Conclusion and Recommendations

Medical folk is still being practiced in the rural communities of Phitsanulok Province for ailments that need immediate attention. The folkhealers rely on herbs with medicinal values, and were found to be effective. There must be an information campaign about the medicinal uses of these herbs so that other local communities who could not access the health/medical services could also make use of these herbs.

Relevant agencies should promote and support the information dissemination about the local medical science in order to maintain the culture and traditional knowledge of the Thai society.

References

- Gomart Jueangsatearnsub.2008. *Culture, health and healing: the concept of social and medical anthropology*. Nonthaburi : Society and Health Institute.
- Group of Thai traditional medicine, Department of Thai Traditional Medicine Development and Alternative Medicine.2004. *Indigenous of Thai Medicine*.Nonthaburi: Ministry of Health.
- Kasikorn research Center.“Dietary Supplement : Market Trends in 2009” National Food Institute of Thailand. <http://fic.nfi.or.th/th/thaifood/product52-diatary.asp> (May 19, 2010).
- Nongkran Kanchanaprasert. 2001. “A Study Local Wisdom on Herbs Used for Community Empowerment in Amphoe Muang,Phitsanulok province” *Journal of Research and Development Institut,University of Rajabhat Uttaradit*.Vol.24.No.3.
- Songyot Khamchai. 1998. “Effect of folk Healer Grouping for Health Service” *Journal of the 10th National Hospital Accreditation Conference. Bangkok, Thailand*.

Social Structures Influencing the Prevention of Malaria: A Case of a Community-Based Malaria Prevention Project in Modern Yaeyama Islands, Japan

Shinako Takahashi

The United Graduate School of Education

Tokyo Gakugei University, Japan

t-shinako@jcom.home.ne.jp

Abstract

Since the banning of dichlorodihetyltrichloroethane (DDT), malaria prevention projects led by the World Health Organization (WHO) have shifted from mass drug administration (MDA) to community-based approaches that focus on health education and improvement of the environment. However, some studies reported that when these community-based projects are not tailored to the particular circumstances of the locale, community participation is carried out superficially and effective long-term prevention is not achieved. Malaria prevention in the Yaeyama islands of Okinawa prefecture is similar to the community-based malaria prevention projects currently being implemented in developing countries today. The situation in the Yaeyama islands is similar with the developing countries in such a way that the type of malaria suffered is caused by the Plasmodium falciparum parasite, for which the mortality rate is highest. Also, personnel to handle preventative measures were scarce and MDA had not been practiced. However, historical documents show that certain parts of the Yaeyama islands were nevertheless able to eradicate malaria almost entirely. This study explores how villages survived malaria epidemic and analyzes the characteristics of the social structure that allowed for effective community-based prevention.

Introduction

According to the World Health Organization (WHO) World Malaria Report 2008, an estimated 3.3 billion people in 109 countries, approximately half of the world's population, live in areas with a risk of malaria. Nearly one million of an estimated 189 to 327 million malaria patients die every year. In Africa in particular, 98 percent of the reported malaria cases were caused by Plasmodium falciparum¹, and 90 percent of malaria deaths were in the African region, followed by 4 percent in Southeast Asia.

Since the banning of DDT and the emergence of mosquitoes with resistance to antimalarial drugs, malaria prevention projects led by WHO have shifted from mass drug administration (MDA) to medical approaches, such as clinical treatment and supply of medicines, combined with community-based approaches that focus on health education and improvement of the environment. In 1998, Roll Back Malaria (RBM), a global partnership to control malaria, was launched by organizations such as WHO, the United Nations International Children's Fund (UNICEF), United Nations Development Programme (UNDP), and the World Bank. These initiatives seek to further malaria

prevention through the primary health care (PHC) approach, that is, by emphasizing community participation and individual initiative.

However, some reports indicate that promotion of the PHC concept and community-based projects have encountered some difficulties due to the residents' misunderstanding about the purpose of the project. For example, in the case of a community-based project in the Solomon Islands, residents who were participating in weeding activities had the misconception that ingesting mosquitoes caused malaria. (Utsumi 2006, p.6). In Tanzania, the prevention project did not cater to the needs and capacities of the residents. Problems included local residents' frustration with the project, such as the odor of insecticide and the trouble of moving furniture when spraying insecticide, and the fact that half the number of microscopes could not be used as there were missing parts or broken. (Takahashi et al. 2004)

Malaria is a disease that raged during the colonization of Asia and Africa by the European powers. (Saito 2001, p. 56) As it often results from regions in the course of development, it is also referred to as one of the "diseases of development" (Hughes and Hunter 1970, p. 481). The situation in the Yaeyama islands is very similar to that of developing countries today in the following respects:

- Okinawa prefecture is located in the subtropics.
- The malaria was caused by the *Plasmodium falciparum*.
- The effectiveness of DDT was unknown at the time.
- The treatment of Okinawa by Japan has been much like that of a colony.³

The Yaeyama island, where the Ryukyu Kingdom is located had encouraged the construction of new villages and the opening up of new land as a means of increasing tax revenues, is constantly threatened by malaria. The way the Yaeyama island residents were forced to remain in the malaria-endemic region and take part in land reclamation in order to sustain their families and villages is similar to the situation of people who confront malaria in developing countries today. If the surviving Yaeyama villages of the past had specific strategies that helped them stave off the threat of malaria, surely those strategies could also be effective in dealing with problems developing countries continue to face today.

The desertion of villages in the Yaeyama islands in the pre-modern to modern period was once attributed primarily to malaria. However, some villages on Iriomote island, such as Sonai, had managed to survive for over 500 years despite being plagued by malaria. This paper analyzes how villages survived in malaria-endemic regions between 1900 and 1938, during which many villages were abandoned on the Yaeyama islands. This paper also focuses on the social structure of the surviving villages.

Malaria in the Modern Yaeyama Villages

Study area

The Yaeyama islands are made up of 20 inhabited and uninhabited islets of varying sizes. These islands are located in the southwestern part of Okinawa prefecture, Ishigaki is the central island of the Yaeyama chain. Its south-central region is mountainous, but the southern coastal area has been urbanized. As of March 2008, Ishigaki had a population of 47,690 and continues to grow. The Ishigaki and Iriomote islands (the latter approximately 289 square kilometers) are the largest of the Yaeyama islands. A large part of the heart of Iriomote island is covered with 300 to 400 meter-high mountains. Yearly precipitation is approximately 2,500 millimeters, and about 40 rivers of varying size run through the island. There is very little flatland and the villages are located in the open area near the coast. The island produces sugarcane, pineapple, and beef. Residents in older villages grow rice in paddy fields. As of March 2008, the population of Iriomote island was 2,264 and that of the village of Sonai was 162. The population has been on the decline as a result of the aging population and a birth rate.

Malaria in the Yaeyama islands

According to the statistics from 1922 to 1943, the number of malaria patients in the Yaeyama islands between 1922 and 1943 ranged from 1,000 to 2,000, with deaths ranging from 20 to 30 a year. (Yaeyama Health Center 1998, p. 4) *Anopheles* mosquitoes, which are carriers of malaria, are known to inhabit mountainous environments with swamps and ponds and the riparian environments surrounding the rivers. According to data collected in 1894, 27 out of 37 villages (excluding Hateruma island, for which data is not available), or 73 percent of the villages in the Yaeyama islands were located in malaria-endemic regions. Non-endemic villages were found only on smaller islands excluding the Kohama and Yonaguni islands and in the southern coastal area of Ishigaki island. According to the survey in 1894, of all the malaria, endemic villages on Ishigaki and Iriomote islands, only eight villages—three on Ishigaki Island and five on Iriomote Island had survived. Seven of these eight villages, excluding Ibaruma, of which little is known, were old villages established before 1728. The fact that only eight of the 25 endemic villages on the Ishigaki and Iriomote islands survived sufficiently illustrates how fiercely malaria raged in the Yaeyama islands.

In 1961, malaria in the Yaeyama islands was eradicated by the Wheeler plan under the American administration after the war. The Wheeler plan was a malaria eradication program led by WHO that was based on the residual spraying of DDT over three years. Today, after 40 years later, the residents consider malaria a disease of the past. However, recent research shows that potential carriers such as *Anopheles minimus* and *Anopheles sinensis* still inhabit a big area surrounding Ishigaki island.

The Difference between Ishigaki and Iriomote Islands

The survey of the number of malaria cases in the entire Yaeyama region began in 1922, the year after the Malaria Prevention Office was established. However, surveys of individual villages tended to be performed irregularly. Among the rather fragmentary records available is a valuable survey of malaria cases in individual villages conducted over a 15-year period starting in 1928 (Yoshino 1989 [1946], pp. 572–573). When the percentages of malaria cases on the Ishigaki and Iriomote islands were compared based on this survey, it was discovered that the average percentage of malaria patients in endemic villages on Ishigaki island was quite high, at 41 percent, whereas it was 25 percent for Iriomote island. On Iriomote, the percentage of patients steadily decreased following the outbreak in 1929, and the numbers remained somewhat contained even during the 1938 outbreak. With regard to Ishigaki, even in Kabira, the only village with a relatively low patient rate, 90 percent of its residents contracted malaria in 1938. From these sources, it can be presumed that the preventive measures taken on Iriomote were more effective than those on Ishigaki.

Characteristics of Surviving Villages in Malaria-Endemic Regions

According to a survey conducted in 1894, there were 31 villages on the Ishigaki and Iriomote islands. In organizing the details of how these villages were established and reestablished, it was discovered that the ones that survived for over 281 years had been established prior to the administration of Sai On, a Ryukyu Kingdom politician who governed between 1728 and 1761. This study refers to these villages as “old villages” (those established before 1728). There are a total of 12 old villages on the two islands: six on Ishigaki Island and six on Iriomote Island. The villages that existed for less than 280 years—i.e., established after 1728—are called “new villages”. These villages were constructed as a part of Sai On’s plan to settle the Yaeyama islands. Excluding the three villages whose dates of establishment are unknown, there were 16 new villages. These include 11 on Ishigaki Island and five (5) on Iriomote island. Shinken Ohama, a scholar specializing in the Yaeyama region, discusses the relationship between malaria and the forced relocation of residents in failing to create and sustain the new villages. He states that the establishment of new villages through forced relocation failed without exception, primarily because the government did not take into consideration the endemic malaria problem in the Yaeyama islands, and because it mercilessly demanded head taxes⁴ from the poor immigrant villagers. (Ohama 1971, pp. 247–259).

With the exception of a few villages, for which there is a lack of sufficient historical data, it became clear that all of the 14 malaria-endemic villages that became extinct in the modern period were new villages, whereas all of the old villages had survived. As farmers were not free to move from one place to another at the time, villages became deserted due to natural decline in population, and villages with decreasing population only managed to survive by continuously being forced to relocate.

The Malaria Prevention Project in the Modern Yaeyama Islands

The Activities of the Malaria Prevention Units

The first of the malaria prevention units was established in 1921 in a Yaeyama regional government building in the southern part of Ishigaki Island. The second malaria prevention unit was established in the following year in the village of Sonai as the Iriomote branch, and its activities covered the villages of Sonai, Hoshidate, Unauki, Amitori, Sakiyama, and Uehara in the western part of Iriomote Island, as well as the coal-mining settlements.

In 1926, the former malaria prevention units were reorganized into four new units. Scrutiny of the documents submitted by each unit showed that the Ishigaki island units submitted only monthly plans of activities and their content was largely identical. The second prevention unit from Iriomote had submitted the largest number of documents of all the four units, and their contents covered a large scope of activities. For example, among the large amount of document, there was an activity progress report that was updated every 10 days by the four prevention staff members. These included warnings, cautions, and reports about the use and purchase of mosquito nets, weeding and clearing forests, water drainage, administering medicine, and blood sampling. In addition, they provided a column to note down the number of reported cases regarding sewage-maintenance and other repairs, mosquito-net purchases and repairs, weeding and clearing forests, neighborhood rounds, reports by residents, and other items. Also recorded were the number of houses and inhabitants, medical accounts, and the number of routine blood samplings conducted; these were reported every 10 day (Iriomote Branch Office, 1926). Other document, such as monthly activity plans and reports, medical examination documents, journals, and regulations were written up in detail, albeit intermittently after 1922. From their attention to detail and the sheer amount of documentation, it can be concluded that the second prevention unit was extremely thorough.

Malaria Prevention Project in Sonai

Number of Malaria Cases in Sonai

It is difficult to accurately grasp how many malaria cases existed in the village of Sonai, as jurisdiction over the village had changed several times. Considering the village population of 270 recorded in 1873 and 101 recorded malaria cases in 1894, the number of malaria cases is estimated to be approximately 37 percent of the total population. There was a 40 percent malaria case in 1928, and it is suspected that there were consistently at least 100 malaria patients every year. However, in 1935, the number of malaria patients dropped sharply to 34, or 5.7 percent of the population. This decline in malaria cases continued steadily, and the only time malaria cases rose above 20 percent thereafter was in 1938. The population of Sonai even increased between the 1920s and 1930s.⁵

According to the report by the second malaria prevention units, regular medical examinations took place twice a month over three days in Sonai and Hoshidate. However, as there were 3,500 people in the coal mining settlements and the villages of Unauki, Amitori, and Sakiyama were only accessible by dugout boats (kuribune), performing medical examinations was not an easy task (Iriomote Branch Office 1922). Despite these difficulties, the total number of malaria patients decreased in all areas other than the coal mining settlements. Particularly in Sonai and Hoshidate, which had a 20 to 30 percent malaria rate around 1922, the number of patients decreased significantly in the years leading up to 1933. By 1932, the number had decreased ranging from 1.5 to 9 percent, and there were almost no deaths from malaria (Nakazato, 1933). This section will observe how the residents had responded to the extraordinary efforts made by the prevention personnel.

Village relocation

The greatest social change that Sonai underwent between 1900 and 1938, the period during which many villages were abandoned on Iriomote Island, was the relocation of residents of Uemura (on a peninsula west of Sonai) to Shitamura (lower ground in the same village). According to interviews with residents, some houses were already deserted by 1894, hence, commence of relocation began is unknown. Some sources report that the move began in the 1910s and that Uemura was completely uninhabited by around 1935, so this process presumably took approximately 20 to 40 years (Ishigaki 1991, p 196). During the same period in other villages, many residents were moving from endemic to non-endemic regions, but the residents of Sonai remained on the island and relocated only within the village. Uemura and Shitamura are small divisions within the village, with Uemura located atop a cliff approximately 20 to 30 meters above sea level. Therefore, this relocation can be considered a residential relocation within the village.

The residents of Uemura moved to the center of Shitamura, where they had filled in part of a pisada, or rice-seedling paddy field, that belonged to them. S, a male born in 1927, when asked about the relocation, said that his extended family lived in one house in Uemura, but when they moved to Shitamura, the siblings built their own houses. Each person worked on filling in his own land, but some families worked together. S and his family moved to Shitamura because everyone else was moving. This case exemplifies how decisions were made as a household.

The residents decided to move down to Shitamura because of the convenience of access to well water. Until the small-scale water system was set up in 1939, Uemura residents had to descend a steep hill to reach the well by the beach below the cliff-called Nga-to obtain water. B, a male born in 1944, says that the path to Nga was extremely steep and his mother often used to talk about the difficulties of obtaining water. There is another well in Shitamura called Uhiraka, but the pisada paddy field near the well was an anopheles mosquito habitat. Living near the paddy fields increased the risk of being bitten by mosquitoes, but presumably, the residents saw that those who took the initiative to move there survived and eventually followed suit, moving also. Instead of leaving the island in order to survive, Sonai residents chose to fill in the paddy fields

and improve the surrounding environment on their own initiative, and eventually improving their living environment.

Community-based malaria prevention project

The malaria prevention activities in Sonai included clearing forests, keeping the village clean, filling in paddy fields, and improving sewage systems in order to prevent the breeding of mosquitoes. In short, great efforts were made to improve the surrounding environment and to decrease the number of anopheles mosquitoes. As these activities would not yield results unless every resident understood the significance of the activities and cooperated, the leaders and other voluntary members of the village called meetings to discuss the malaria situation before these plans were put into action. In 1932, the village received financial aid from Okinawa prefecture, with which a 250-meter sewage system was completed and holes in the Iriomote Jinjo Elementary School playing field were filled to prevent puddles from forming. For these projects, village leaders and school staff members of both Sonai and Hoshidate gathered at a joint meeting and unanimously decided to take action. With the help of all the residents, the projects were completed within a month. In 1937, the Malaria Prevention Center celebrated its fifteenth anniversary and held a public health exhibition. Many coal mine companies gave the Center donations and commemorative gifts such as microscopes and immersion lenses. The village also began their negotiations with the prefectural authorities about setting up small-scale water systems at an early stage. They completed the first small-scale water system in the Yaeyama region (second in Okinawa prefecture) with financial aid from the prefecture received in 1939 and 340 volunteers from the village, (Nane 1971, pp. 783–799).

Sonai's Malaria Prevention Project and Social Structure

Sonai's Malaria Prevention Project and Its Social Background

Sonai's malaria prevention project was unique in such a way that prevention activities were decided in village meetings and undertaken by the entire community and that the village received financial aid from the prefecture and donations from coalmining companies. My research found that Sonai was able to achieve effective malaria prevention on its own because of the following social factors:

- *Sonai's elementary school functioned normally.* The Iriomote Elementary School is the only elementary school on Iriomote Island actively functioning as an educational facility in the 1910s. Natives of Sonai became village officials and members of the malaria prevention staff, and they devoted themselves to malaria prevention by planning projects such as clearing forests, cleaning up the village, and setting up small-scale water systems. The high literacy rate also meant that promotional materials regarding health and medicine were widely read.

- *Strong bonds among residents are characteristic especially of old villages.* Okinawa's *otake-a* kind of local shrine-tradition of religious belief promoted networks of mutual aid among relatives and non-relatives that gradually expanded. (Onda 2006, pp. 288–351). This kind of network remained especially strong in the old village of Sonai because its residents were not forced to relocate and few families moved away even after enforcement of the Land Readjustment Act.
- *The continuation of local traditions of consultation and decision-making.* Under the land allotment system⁶ that prevailed before the Land Readjustment Act, the majority of the village land was communal property. Paying taxes was the collective responsibility of each village and neighborhood. It was customary for male villagers over the age of 15 to meet together and make important decisions regarding land allotment and village bylaws (Nakayoshi 1992 [1928], p. 446). With the enforcement of the Land Readjustment Act, the previous land allotment system was no longer practiced and village bylaws no longer held legal force, but in practice, the village continued to function as a social center for the villagers and the traditional village law continued to dictate social boundary lines.

The Social Structure of Sonai

In Sonai today, rather than malaria, it is the aging population and declining birthrate that causes the village population to fall. In order to prevent the decline of the village, the entire community takes part in keeping village rituals and festivals alive. The tradition of local consultation has also been passed down. These discussions are taken very seriously, and understanding is shared that no one can oppose what has been decided collectively. For instance, the most important festival in the village is the Shichi festival, where a 49-year old male plays the role of the Miruku deity. Even today, men who have agreed to play the role are required to come to the island and fulfill their duty, even if they reside outside of the prefecture. T, a male born in 1931, who used to be the head of the community center, simply explains that that's just "the rule" (*okite*).

We may surmise that participation in efforts to prevent malaria in the pre-war village community was, in like manner, considered binding rules. For example, the prevention progress report from 1926 mentions frequent notices calling on villagers to use mosquito nets, clear weeds and forest underbrush, drain away standing water, and take medicine. Also, in 1937, on the occasion of the fifteenth anniversary of the Malaria Prevention Center, four families that had no cases of malaria in 15 years received official commendations. As this shows, participation in malaria prevention activities was considered a binding rule of the village, and not contracting malaria was an honor to be commended. As they watched other villages around them abandoned one after another, Sonai villagers must have recognized that the decline of their village could threaten their own existence. This recognition strengthened the villagers' resolve to protect the village rules and the honor of their families. Encouraging the use of mosquito nets, maintaining the environment, commending families without malaria patients, and compulsory participation in village rituals and festivals were all strategies that contributed to the health and survival of the village.

Comparing Sonai's Case with Malaria Prevention Projects Today

There are four similar factors among the malaria prevention projects today and the preventive measures taken in the western region of modern Iriomote islands.

- *Thorough vector control in the entire region.* The Yaeyama islands did not receive significant financial aid for medical research or sufficient supply of preventative medications such as quinine. Hence, success was achieved by assiduous improvement of the village's living environment combined with human protection measures.
- *Extensive health education.* In 1937, 29 malaria-prevention events such as talks and films were held in Sonai, with a recorded 600 to 700 participants at each event. Despite the events being conducted by a small team consisting of one medical doctor and four prevention professionals, the prevention unit put enormous effort into communicating the importance of malaria prevention to village residents.
- *Encouragement of the use of mosquito nets.* According to the survey of mosquito net use by the village, 95 percent of homes in five villages in western Iriomote Island used mosquito nets, and in Sonai, all of the village's 89 households used mosquito nets (Iriomote Branch Office 1922). Even today, the WHO considers mosquito nets as one of the most important cornerstones of malaria prevention. The use of insecticide-treated mosquito nets is highly encouraged in developing countries today because it is an inexpensive and effective preventive measure.
- *Villagers acting on their own initiative.* In Sonai, vector control was practiced by the village as a whole specifically, this entails improvement of the environment by eliminating puddles and marshy environments that provide the breeding grounds for anopheles, clearing vegetation, and burning mosquito coils. These practices could not have continued if the villagers did not have a strong incentive to do so. Villagers participated actively in malaria prevention because they recognized and felt strongly that they had to save the village from population decline.

Conclusions

All surviving villages where malaria was endemic were old villages with a social structure that reduced the dangers of malaria. All seven of the surviving endemic villages were old villages. Because residents of these villages were not forced to relocate after the modern period, the bonds that formed between these people who shared the same otake shrine, participation in local festivals, and the local lifestyle were extremely strong. With regard to the village management, traditions of consultation among village residents continued to be passed down after enforcement of the Land Readjustment Act. This social structure created a strong foundation that allowed for a community-based malaria prevention project to succeed.

Sonai residents confronted malaria and succeeded in controlling the disease. In a period when many people were abandoning their villages, Sonai residents remained, relocating within their village locale instead of moving to a non-endemic region. Initially, each individual household relocated to ensure its own survival, but the practice of improving the environment that came out of this voluntary relocation paved the way for community participation in malaria prevention efforts. Such community-based efforts succeeded in significantly decreasing the number of malaria cases.

The malaria prevention strategies practiced in the prewar period on western Iriomote Island are similar to community-based malaria prevention projects today. The anti-malaria activities spontaneously that were adopted in western Iriomote island (i.e. use of mosquito nets, health education, and the improvement of living environments) were tactics initially adopted for survival of individual households and the entire village. These strategies happen to be the very actions that WHO advises be taken for malaria prevention projects today.

The bane of malaria, from which Yaeyama island residents suffered throughout the pre-modern to modern period, was ultimately not eradicated by the islanders' efforts only. However, it is noteworthy that the people of Iriomote, an island that is entirely malaria endemic, even with very few medical personnel, were able to control the outbreak of malaria cases. This example illustrates that it is possible to control malaria in endemic regions today by practicing continuous and effective preventive measures.

References

- Dai-ni Han [Second Prevention Unit]. 1937–1939. “Mararia boatsu sagyo jitchi hokoku tsuzuri: ji Showa juninen shi Showa juyonen” [Malaria Prevention Activity Progress Report from 1937 to 1939].
- Hughes, Charles C. and John M. Hunter, 1970. “Diseases and ‘Development’ in Africa.” *Social Science and Medicine* 3, pp. 443–93.
- Iriomote Shutchojo [Iriomote Branch Office]. 1922. “Kenshin ni kansuru shorui: Taisho juichinen” [Medical Examination Documents: 1922].
- Iriomote Shutchojo [Iriomote Branch Office]. 1926. “Junpo hikae tsuzuri Taisho jugonen” [Ten-day Reports: 1926].
- Ishigaki, Kinsei. 1991. “Bunken kara mita Sonai no rekishi: Uemura iseki o chushin to shite” [What Documents Tell about the History of Sonai: Focus on the Uemura Site]. In vol. 98 of *Iriomotejima Uemura iseki: Juyo iseki kakunin chosa hokoku* [Iriomote Island Uemura Site: Survey Report on Important Sites]. Okinawa-ken Bunkazai Chosa Hokokusho [Okinawa Prefecture Cultural Property Survey Reports], pp. 196–202.
- Nakayoshi Choji. 1992 [1928]. “Ryukyu no jiwari seido” [Land Allotment System in the Ryukyu Islands]. In vol. 12 of *Nogyo doboku koten senshu, Kyushu hen* [Selected Literature on Farming and Engineering: Kyushu Island], ed. Nogyo Doboku Gakkai Koten Fukkoku linkai [Society of Farming and Engineering Committee for Republication of Historical Literature]. Tokyo: Nihon Hyoronsha.

- Nakazato, Chotei. 1933. "Mararia ni kansuru shorui tsuzuri Showa hachinen" [Malaria-related Documents: 1933].
- Nane, Takeshi. 1979. *Iriomotejima no mararia bokumetsu shi* [The History of Malaria Eradication on Iriomote Island]. Self-published.
- Onda, Morio. 2006. *Gojo shakairon: Yui, Moyai, Tetsudai no minzoku shakaigaku* [The Mutual Aid Society: A Study of Folk Society among the Yui, Moyai, and Tetsudai Peoples]. Tokyo Sekai Shisoshu.
- Ohama, Shinken. 1971. *Yaeyama no jintozei* [The Head Tax System in the Yaeyama Islands]. Tokyo: San'ichi Shobo.
- Saito, Osamu. 2001. "Kaihatsu to shippei" [Development and Disease], in *Shippei, kaihatsu, teikoku iryo* [Disease, Development, and Imperial Medicine], pp. 45–74. Tokyo Daigaku Shuppankai.
- Sakihama, Yasushi. 2007. "Kindai Yaeyama shoto ni okeru mararia yubyochi no chiriteki seikaku" [Regional Characteristics of Malaria-Endemic Areas in the Modern Yaeyama Islands]. In vol. 34 of *Chiiki kenkyu shirizu* [Regional Studies Series], pp. 1–13. Okinawa International University.
- Takahashi, Hiroshi et al. 2004. "Tanzania ni okeru Nippon no toshi mararia taisaku" [Japan's Experiences in Urban Malaria Control in Tanzania]. In vol. 20–2 of *Kokusai kyoryoku kenkyu* [Technology and Development by JICA] 20–2, pp. 41–54.
- Uechi, Ichiro. 2003. "Okinawa Meijiiki no kyukan sonchi taisaku ni kansuru ichi kosatsu: shuraku kanshuho o jirei ni" [Preserving Traditions in Okinawa in the Meiji Era: Case Study in Customary Village Law], *Waseda Law Journal* 53.
- Utsumi, Takako. 2006. "Kokusai hoken iryo kyoryoku ni okeru iryo jinruigakuteki shiten no igi: Soromon shotokoku no mararia o jirei to shite" [The Purpose of International Health and Medical Cooperation Seen from a Medical Anthropological Viewpoint: A Case Study of Malaria in the Solomon Islands]. *Kokusai hoken shienkai* [Journal of the Association for International Health Assistance] 3, pp. 5–13.
- World Health Organization. 2008. *World Malaria Report 2008*. pp. vii–x, 9–15.
- Yaeyama Hokenjo [Yaeyama Health Office]. 1998. *Okinawa-ken Yaeyama chiiki ni okeru mararia yubyo jokyo no suii ni tsuite* [Developments in the Malaria Situation in the Yaeyama Region of Okinawa Prefecture].
- Yoshino, Kozen. 1989 [1946]. "Yaeyama shoto no mararia ni tsuite" [Malaria in the Yaeyama Islands]. In vol. 3 of *Ishigaki shishi shiryohen kindai* [History of Modern Ishigaki], *Mararia Shiryō Shusei* [Collection of Malaria-related Documents], ed. Ishigakishi Somubu Shishi Henshu Shitsu [City History Editorial Division, General Affairs Department, City of Ishigaki]. pp. 572–74. Okinawa: Ishigaki City Hall.
-

Indigenous Management of Water Resources in Bontoc, Mountain Province, Philippines

Antonina M. Manochon

Mountain Province State Polytechnic College

tonimm_5@yahoo.com

Abstract

This study aimed to identify some basic indigenous concepts of water resource management in Bontoc, Mountain Province and sought to blend said concepts with the government's formal system of water management. Using the qualitative and naturalist research paradigm through personal participation, interviews and listening to the people's narratives, this study revealed the two competing water management paradigms in the Bontoc contemporary society. The local government's management of potable water resources is based on a western paradigm where water is an economic commodity. On the other hand, this study brought to light the holistic approach of indigenous management of water resources; it considers all the social, cultural, spiritual, and economic factors in managing water resources. The study strengthened the idea that local communities are experiencing water crisis because the government does not factor in the cultural and social dimensions of the indigenous community. It is then the common assumption that the government policies and decision making in water management brought about the erosion of indigenous cultures, value systems, and indigenous knowledge and practice in the management of water resources. Moreover, it excluded the community members from the management of water resources.

Uncovered in this study are some basic indigenous concepts on the management of water resources in Bontoc that has sustained the community since the entry of colonialism and modernity. The underlying worldviews in the Bontoks' management practice are: Man is one with nature and water resource management is the responsibility of every member in the community. The Bontoks believe that water cannot be privately owned neither it is a commodity for commerce. In the people's management practice they follow the principle of sharing, communal ownership, equity, fairness, and cooperation. It moreover explained the Bontok's worldview that there is a fundamental relationship between the forest and water that permeates traditional management of water resources. This is evidenced in their forest code and construction of rice terraces and irrigation canals which have shaped their natural landscape and cultural identity.

Keywords: indigenous, water resources, water management, holistic approach

Introduction

Water is an essential factor for sustainable development in the rural areas particularly in the natural resources conservation and in the improvement of the local people's quality of life. But in spite of technically well-managed water resources, local communities are generally experiencing "water crisis".

One of the global issues today is the scarcity of clean drinking water. To some extent, water has become a commercial commodity. Recently, one of the setbacks of national and local agriculture is climate change, particularly the *El Nino* phenomenon resulting in the lack of water to irrigate rice fields. Delmar Carino (2009) reported that the 175-kilometer Chico River that runs through the hinterlands of the Cordillera Region in the Philippines is fast losing its allure of clean and abundant water, and local officials fear that communities depending on it may soon find their water supply murky or dry. The researchers have also observed that said problems have to do with the present system of water resources management. Studies on water management claimed that these problems are due to the failure of the government to recognize the traditional water management structures and unique relationship between indigenous peoples with their water resources. Added to these is the influence of colonialism which undermined the value and strength of customary laws governing the use and sharing of water resources resulting in the marginalization of indigenous knowledge systems. Indigenous people play a significant role in the management and sustainability of water resources. Their knowledge is an integral part of humanity's heritage and cultural diversity. The relationship of indigenous communities to water resources permeates their culture and spiritual values. The people's relationship with water shapes their landscape as observed in the rice terraces structures and drainage systems. In many instances, indigenous people regard water not merely a necessity for human survival but a part of the people's spirituality as embedded in their myths and rituals. Water, to an indigenous person, is the essence of the spiritual and physical life, and the spirit world is the source of all that sustains life. Water is also part of their dreamtime narratives and cosmological myths to explain the creation of the world and natural features of their environment. Indigenous knowledge system on water resource management is based on principles and practices that balance immediate needs and the needs of the environment, people, and other living things, as well as the sustainability of the needs of future generations.

The concept of water resource management is not new to the indigenous peoples in Mountain Province, Philippines. In her study, Bang-oa (2003) highlighted that the Besao people maintained traditional irrigators' association called the *dapat*. Said associations are entitled to recognized rights and access to water resources. Traditional management of water resources in Besao is likewise interwoven in the belief of spirits inhabiting elements of nature, *nakinbaey*, and the morality embodied in the *inayan* that governs the daily lives of the people <<http://www.law.arizona.edu/journals/AJICL/AJICL2004Vol211/molintas.pdf>>.

The Besao concept of water management is almost parallel among the people of Sabah, Malaysia. In the study entitled, “Natural Resource Management Country Studies” Lasimbang noted that management structure of water is based on the *adat*, the common law of Islamic countries in Southeast Asia. The *adat* establishes the Council of Elders as the key people in the enforcement of the *adat* and management of water resources. Just like other indigenous peoples around the world, Sabah’s resource management involves both the physical and spiritual realms in each indigenous person’s life. Basic to the indigenous people of Sabah’s worldview is looking at their natural resources as part of their spiritual and cultural tradition giving them their identity as a people<(http://regionalcentralbangkok.undp.or.th/practices/governance/document/NRM_MALAYSIA.PDF)>.

It is moreover maintained by Jackson and Douglas, authors of the research paper on “Indigenous Management and the Water Resource Sector” that rituals and songs are interrelated and has a special role in the conservation practices of indigenous peoples. With respect to water, rituals and songs maintain the unimpeded flow of water, an important principle in sustaining the pools inhabited by mythic beings. Custom law of Indigenous people’s water resource management is ethically described as one that is premised on care, restraint, collective ownership and reciprocity.

This paper looked into the traditional management of water resources in Bontoc, Mountain Province in Northern Philippines. The town of Bontoc is the home of the Bontoks, one of the major ethnic groups in the Cordillera Administrative Region. As an indigenous community, Bontoc possesses indigenous knowledge and established structures of managing their water resources. For many years since colonization, such knowledge system and practice have been providing the community’s water supply. Agriculture, being one of the major livelihoods in Bontoc makes water a necessity. Management and allocation of water resources are generally implemented by the *tomayan* (members of the clan) in accordance with laws of the *ato* through the council of elders. The *ato* is the traditional political, social, cultural and religious institution of the Bontoc society.

Traditional management of water resources in Bontoc is based on the principles of communal ownership and sharing, which takes into consideration the physical, social and spiritual aspects of man and nature. One of the people’s traditional practices is readily observed during the dry season when water is scarcely enough to irrigate the rice fields. During summer, the Bontoks observe a customary law, traditionally known as the *oblis* in which farmers take turns in watering their fields and observe communal rituals known as the *manerwap* and *mangiyag*. The Bontoks also practice collective ownership of water springs and hence all members of the community are free to draw their drinking water from them. Moreover, traditional rituals are performed in water springs to appease or give respect to the spirits dwelling therein and in return the spirits provide abundant and clean water for the people.

The town of Bontoc, however is not exempted from the negative impacts of colonialism, modern technology and globalization, global warming, among others. Bontoc society is at present beset with ecological crises such as dwindling water supply, global warming, deforestation, pollution, conflict over water rights, and mismanagement of natural resources.

Lack of water supply is a global concern which neither western knowledge system of water management nor the government's formal system of management can adequately solve. The United Nations and the Philippine government are encouraging the study of indigenous knowledge systems and practice with the hope that blending indigenous knowledge system and practice with western science is a key alternative to alleviate the worldwide ecological crises; develop awareness for indigenous knowledge and practice; contribute some solutions in addressing the worldwide predicament over water.

This paper highlighted the indigenous knowledge and practice in the management of water resources in Bontoc, Mountain Province. Specifically, this paper examined how indigenous knowledge and practices protect and sustain the water resources in Bontoc, Mountain Province: the major roles of the traditional management of water resources in Bontoc, in ensuring the sustainable management of water resources in Bontoc; and the possibilities of an innovative water management structure where majority of the indigenous stakeholders participate in decision making and management of their water resources.

Conceptual Framework

There are two paradigms competing in the management of water resources in contemporary indigenous communities. The formal system of water management used by the government is based on a western paradigm where water is a material commodity. Its value orientation is fundamentally economic. These are clearly shown in the way the government creates policies and implements management of water resources since its view of water is only an object that can contribute to local agriculture and economy. The formal management of water resources does not factor in the cultural dimensions of the indigenous community. These common assumptions of policy and decision makers in water management underlie the erosion of indigenous cultures and knowledge system in the management of water resources.

The second paradigm in water management is the indigenous people's paradigm of water management. Management of resources is holistic in that the physical and spiritual are not compartmentalized but are taken as one. The relationship between man and nature (land and water) is the basis of man's physical, cultural and spiritual existence. Indigenous people look at natural resources as an integral part of their everyday life. In a report by Luithi and Lasimbang, they stated that respect for natural resources, and their importance is manifested in everyday activities and practice, as well as in their myths and rituals. The knowledge for management of these resources is embedded in the social, spiritual, cultural, economic and political milieu of the peoples. Taboos, ceremonies and rituals which express respect and devotion to the spirits that are

believed to guard different natural resources not only serve as an important ceremonial role but also ensure that rules for resource use are adhered to by community members.” (Lasimbang, 9)

Many indigenous communities believe that water is the source of all life forms and must be protected. Hence, indigenous people protect their forests since these are essentially linked to the conservation of water resources. All indigenous communities have beliefs and taboos against disturbing any watershed area or spring. Forest areas with watersheds and springs are considered sacred by most indigenous communities. Thus management of water resources is innately connected to their religious belief system. Sacred sites are areas of land and water having special significance to the people and community. These sacred sites are evidences of the people’s close relationship with nature in a spiritual and meaningful manner. Nicholas. (2009) <<http://www.compasnet.org/afbeeldingen/Magazine/...>> Arah Publications, pp. 17-27. The spiritual worldview has important implications for water management. If people view water as a sacred part of Mother Earth, consequently, management of water resources becomes a spiritual practice.

Methodology

The study was conducted in the three barangays of Bontoc, Mountain Province, namely: Bontoc Ili, Samoki and Caluttit. The study employed the holistic, qualitative, participatory, naturalist and descriptive approaches. Holistic approach includes the physical and spiritual realms since there is no division between science and spirituality. Every act of man and every being are considered as sacred. Apprehending the physical world includes methodologies and practices such as observation, experiential learning and apprenticeship. The study likewise employed an eclectic or interdisciplinary approach where the various disciplines, like history, anthropology, natural science, philosophy and literature were all integrated and used in the discussion and validation of findings of this research.

The data were gathered using key informant interview and documentation of people’s narratives. The researcher also participated in the community rituals related to water management. Secondary data were gathered from the library and internet.

Discussion of Findings

Management of Water Resources in Contemporary Bontoc Society

The water resources management in Bontoc, Mountain Province is presently on the reins of the municipal government. Said maintenance and management is limited to potable water for household use. For some years, the municipal government managed its potable water resources through the Bontoc Water District. In 1995, the Sangguniang Bayan passed the Municipal Ordinance No.12 creating the Bontoc Water Services that would oversee management and maintenance of potable water for household use. The Bontoc Water Services is headed by a General Water Services Officer whose function is to administer and supervise the affairs of the office. The policy making body of the

General Water Services Unit is the Sangguniang Bayan. With funding from the municipal government and other sources, the water was sourced out from Balabag, Talubin and Sollong, Lanao Pipes were installed and water is distributed to the barangays of Bontoc Poblacion, Calluttit, Bontoc Ili, Lanao and Samoki. Moreover, the local government constructed a water reservoir at Mount Pattig which is still serviceable after a recent rehabilitation. One or two faucets were established in each barangay where all members take their bath and fetch water for household use. Except for some remote barangays, the individual household, nowadays install their own faucet inside the house. It is also observed that there are lesser communal faucets in more developed communities. Water facilities are acquired, installed, operated and maintained by the municipal government through the Bontoc Water Services and in return, each household pays a monthly fee to the municipal treasury.

However, during the past 20 years or more, the limiting water source and insufficient water supply has become a perennial problem in the town of Bontoc. Among the problems that beset the Bontoc General Water Services include: a) the unequal distribution of water in the community; b) lack of water supply to the houses at the tail end of the town which the local water management failed to address; c) inequitable or unfair payment of water fees for residential and business establishments; d) installation or connection of individual household water pipes without the consent of the Bontoc Water Services; e) issues pertaining to the safety of the water for drinking or for home use. The water sourced out from Balabag and Sollong is barely enough for every household, hence some families buy water from private entities or employ electric water pumps to bring water to residential areas in elevated sites.

When potable water supply is not enough especially during the summer months, water springs serve as the additional source of water. There are four water springs that supplement the water supply in Bontoc. These are the: Tikitik Spring, Payangnga Spring, Sokok Spring and Caluttit water spring. The villagers who live within the vicinity of the springs manage and maintain the spring. Each household contributes for the spring's maintenance. Expenses to buy pig or fowl needed for rituals are likewise shouldered by the families who draw water from these springs. Recently however, it was observed that the water level of these springs has declined. Of the four springs, Tikitik and Caluttit springs continue to provide water and the other two springs have dried up. Water for irrigation purposes is managed by groups composed of rice field owners. For major repairs and rehabilitation, the National Irrigation Administration usually aids the farmer's associations. Whenever requested, the NIA through a Counterpart Scheme Project provides the finances for materials such as cement, transportation, while the farmers provide the labor as counterpart.

Indigenous Knowledge and Practice in the Management of Water Resources

From the framework of the United Nations Convention's definition of indigenous knowledge and practice, the Bontoc society possesses traditional knowledge gained and developed from experience which sustained and conserved their natural resources through the centuries. This study then examined the Bontoc's concept, knowledge and practice in the management of water resources; the contributions of their knowledge and

religious belief through myths and rituals on the conservation of water and in the sustainable management of water resources; and explored the possibility of increasing the participation of stakeholders in the management of water resources.

Before the Philippines was colonized, the Bontoc society lived a comfortable life and enjoyed the bounties and blessings of nature. Natural resources are abundant because the people possessed traditional knowledge and practice that sustain and protect them. Traditional management of water resources was then the responsibility of every member in the community. The *tomayan* (clan members) managed water resources within their respective *tayan* (communal land). Management is based on equal distribution of water as well as the equality in the payment of *walak* (contributions) for the upkeep of the water source and the purchase of pigs, chickens, and *tapey* (rice wine) needed for the performance of water rituals. Management was then in accordance with the code of the *ato* or precedents based on experience in the management and sustainability of water resources. The younger members looked up to their elders for policy and decision making. Younger members of the clan could question an elder's decision. However, decisions and policy-making may be based on precedent law or experience and common sense. Communal water springs were maintained and managed by the villagers that draw water therein. Usually, the people who live nearby the water spring manage and maintain the spring. All the families that benefit from the spring waters share the expenses related to rituals and management of the water source.

The foremost consideration in the traditional water resources management is that water is a communal ownership and could not be owned by private individuals and groups, even if springs and lakes are found on privately-owned lands. During the dry season, water is equally distributed to all rice field owners through a cultural irrigation practice known as the *oblis* (taking turns in the watering of rice fields). Water was never a problem because it was abundant and free from pollution. This is so because the people blended their practices with their environment. The people steadfastly clung to an earth-based worldview and a communal way of being one with nature. To the Bontok, natural resources do not exist for man to exploit, but rather nature exists for man to respect and nurture. This is readily explained in the people's animistic belief or way of life where everything (animate and inanimate) has soul and spirit. This type of worldview affects the use and management of their natural resources. This study examined the symbolic, psychological and spiritual patterns of the Bontok's traditional relationship with water and how to sustain a life affirming culture in the contemporary management of water resources.

Another basic concept in the Bontoc's management of water resources is the view that forests are essentially linked to the conservation and management of water resources. Forests provide water and have significant meanings for the people. Hence the *ato* created the Bontoc Forest Code to protect the forest and make it physically and culturally sustainable for future generations. One of the important laws embedded in the Bontoc Forest Code is in relation to the cutting of trees. The Bontoks could only cut trees just enough for the individual or family's needs or consumption. Mass cutting of trees for logging enterprise is a taboo and never allowed in the traditional Bontoc society. In fact, communal owners of forests have to abide by the Forest Code of the

ato. Owners of farmlands within the forest or mountains could not cut trees more than what they need. This is so because forests are part of the people's physical and spiritual well-being. The watersheds, lakes and springs are considered as sacred sites which are believed to be the dwellings of the spirits. Hence, there are *lawa* (prescribed taboos) that should be observed in the vicinity. Otherwise, it may cause calamity to the individual and the community. In fact, some important acts such as construction of a riprap are often accompanied by rituals and strict observance of taboos prescribed by the traditional law. These are done following indigenous theory that forests and mountains are fundamentally linked with indigenous management of water resources. These knowledge and practices are indications of the fundamental role of water in shaping the natural and cultural landscape of Bontoc. These in turn give the people their own cultural indigenous identity which is readily pictured in the construction of rice terraces along the mountain sides.

According to Vincent Cabrera, news reporter of the Philippine Daily Inquirer, in his news article entitled, "Old Tools for New Climate Problems", Igorots make use of old tools to solve new climate problems. Included in the engineer's lexicon is the word 'riprap' to describe an old practice in managing water resources. Mr. Alfonso Kiat-ong, a Bontoc riprap expert explained that the Bontoc Igorots have mastered the ancient stone walling techniques (*toping*) to shape the loose mountain earth into terraces using stones from the Chico River (Philippine Daily Inquirer, Dec 16, 2009). This ancient practice of rice terracing prevents soil erosion and at the same time sustains the forest watersheds. A Bontoc doing a *toping* chooses carefully the size and roughness each stone. The size of the stone has to do with the *pegnad* (foundation) of the stone wall. Likewise, the stone with a rough texture is chosen because of its ability to stick with other rough stones. These are then carried up the mountain to make stone walls for the rice terraces. Another reason for the rice terracing of mountains as exemplified in Bontoc's indigenous knowledge and practice is that terraced rice fields act as water reservoirs throughout the wet and dry seasons of the year. Likewise, construction of drainage canal and planting of sun grasses along the dike prevents soil erosion. Basco (2009), in her research entitled "Indigenous knowledge and Biodiversity Practice in the Rice Terraces" mentioned that rice terraces help regulate and maintain the water supply to agricultural lands by increasing the amount of rainfall in their areas, storing the rainwater afterwards, and controlling the flow of water to the surrounding rice terraces. When water evaporates from the leaves of trees and other forest plants, water vapor is accumulated in the atmosphere as clouds until it cools and changes into drops of water that fall as rain. Thus, there is more rain in thickly forested areas than in areas without forests.

The roots of plants, especially trees, penetrate or enter deep into the soil. When they die, their roots decay creating small holes in the soil. These holes, along with those dug by earthworms, rats and other forest animals act as small water storages. Trunks of trees, plants, dead leaves and branches that gather on the ground also act as small dams that stop or break the flow of water down the mountain slope. Later, the dead plants rot into humus. Humus is a porous soil like foam that absorbs water and releases it slowly. Added to this indigenous knowledge and practice is the way the people construct irrigation canals along the terraced mountains to coincide with the law of gravitation.

Such is confirmed by Guinabang (2009) in her study where she stated that an intricate system of canals brings a steady well regulated supply of water to the terraces. The irrigation system does not simply involve the principle of gravitation. Rather, water is manipulated so that when water reaches a lower gravitation, it is pushed horizontally forward and sometimes even diagonally upward to feed into the next canal. The canals are often carved into the mountains sides, but troughs made of large bamboo or hollowed tree trunks are used to carry the water across deep ravines. In effect, Bontok indigenous knowledge, through years of experience, maintains that there is a close link of forest and water supply. Conservation of forests means continuous supply of clean water from springs, rivers, lakes and creeks.

The foregoing concept and practice in water resource management is likewise validated by Howard Fry, author of *A History of Mountain Province*. In the Bontoc worldview, the forest is part and parcel of a sustainable water resource management. This was confirmed in the history of the Cordilleras which included the Bontoc people's resistance against the initial mining ventures of the Americans in the 1900s. From their indigenous knowledge system and concept of water resource management, they very well knew that mining the mountains of Bontoc would greatly affect their rice fields and terraces. These people did not study the science of toxic materials but they knew from years of experience that acid water from the mines will poison their water, destroy their crops and annihilate people and animals (Fry 1983: 178). Likewise, the people at barangay Fidelisan, a neighbor-village stood to oppose the mining project in their area. The people firmly believed that if their mountains are tunneled, their rice fields will not produce rice, since it is the water from the mountains that irrigate their fields. Today, the mountains of Bontoc remain free from mining projects except for local family-owned mining entrepreneurs at Mainit, Bontoc. Agreements were made between the miners and the people that they can mine their property on condition that they will not pollute the water resources. These are but some of the facts substantiating the Bontoc people's management theory that forests are virtually linked with the management of water resources. Hence they were able to maintain a sustainable water resource management system through the centuries.

Another special feature of the Bontoc's traditional management of water resources is the cultural practice of *oblis*. This is usually practiced during the summer months when there is a declining water supply for irrigation. Owners of rice fields take turns in watering the rice fields. Often times, a person has to pass the night at the site of his own rice field to guarantee an ample spread of sufficient water on his rice field. In the morning he passes it to another according to a schedule agreed upon by the farmers. Even the owner of the rice field where the water spring is situated is not exempted from the *oblis*. But he/she has the right to have his rice field watered first before the ricefields of other farmers. This cultural irrigation practice portrays a management practice based on cooperation, fairness, equality, malleability and sharing.

Added to said practice in the peoples' knowledge on the management of water resources is the movement and migration of birds which alert the people of weather changes. The presence of a *kiling* (a type of migratory bird) assures the people that a typhoon has left the area. On the other hand, the presence of (*pao*) signals the coming of

a typhoon. This knowledge helps the people prepare for any impending climate change as the people through the *ato* calendar their agricultural activities and communal rituals. By observing the migration movement of birds, the Bontoks believed that appropriate rituals could avert a catastrophe and climate change. These types of knowledge system did not evolve overnight but was developed and tested through years of experience and observation until these have become part of the people's knowledge and practice.

Myths, Rituals and Sacred Water Sites in Water Management

Integral in the worldview and traditional management of water resources of the Bontoc people is their myths and rituals in relation to water. Embedded in the myths and narratives of old folks in the locality are zoomorphic manifestations in the form of snakes and mermaids who dwell in springs, rivers, lakes, and wet lands found in some areas of Bontoc. These snakes and mermaids interact with human beings in many ways and hence the old folks do not take for granted the myths and stories attached to the water sites. The traditional Bontoc considers these water sites as sacred places to do the rituals so as to communicate with the unseen inhabitants therein. Bontoks do not usually harm snakes that enter the house because they believe that they are ancestral manifestations coming for a visit. A snake is driven out of the house by splashing water over the body. A person who kills a snake entering the house will invite misfortune to the individual or to his family.

There are Bontoc myths and songs that narrate about snakes living in springs, lakes and rivers. These myths and songs suggest that water is an animate being in possession of cognitive and affective faculties. Many Bontok myths narrate that water has emotions and can be hurt and because of hurt feelings consequently transfer to another place. This is confirmed in the following true story. Not long ago, there existed a water spring at Tengngay, Samoki that irrigates all the rice terraces in the area. Tengngay is a huge mountain but was terraced into rice fields by Bontoc people long time ago. One day, the spring at Tengngay dried up. The *tomayan* got worried and consulted the native priest about the problem. The native priest informed them that the water dried up in Tengngay and transferred to Tinglayan (a town 40 km north of Bontoc) because it got hurt over the people's squabble over water. After the performance of a ritual, some men-representatives of the *tomayan* set out to Tinglayan to bring back the water. The native priest instructed them to come home straight and make sure not to take a rest upon their return to Bontoc. When they reached Tinglayan, they scooped water, put it on a pouch and traveled back to Bontoc without rest. The reason for the non-stop trip back home is to ensure that the water will not escape. Should they have taken the time to rest, the water would have found a way to escape and would stay permanently in said resting place. Upon reaching Bontoc, the men brought the water to Teng-ngay, Samoki and performed the necessary ritual. They butchered a pig and prayed to the water spirit never to leave them but to continue providing water for the people. Sometime later, water was seen coming out from the mouth of the spring. There are other similar tales in Bontoc that affirm the concept that water is just like a human being.

In the past, great care was taken so as not to disturb or provoke the spirits that lived in springs, marshlands, rivers, and lakes. The Bontoks considered it taboo to use soap or shampoo when taking a dip at a spring or lake. Likewise, it is taboo to wash clothes near the spring. Otherwise these would arouse the ire of the water spirit, which might inflict illness or calamity to the offender or to the community. They believed that any chemical element brought and mixed with water in the spring pollutes it and desecrates the sanctity of the dwelling of the water spirit.

Spirits that dwell on water likewise hate extreme loud booming sounds. The Bontoks believed that loud booming sounds caused by bombs or dynamite blasting would cause the spirit to abandon the spring and consequently bring about the drying of the spring. This is validated by the incident Bontoc in 2006 when the Department of Public Works and Highways (DPWH) started the widening of the Bontoc-Halsema national highway. Along the national highway is the Tikitik spring, a kilometer away from the town of Bontoc. Said spring provides water to the people living in barangays Chakckan and Poblacion. Widening of the national highway entailed blasting of rocks which would disturbed and create tremors on the spring and the watershed that sustains it. The elders of *ato* Palop-o and Foyayeng called for a meeting with the DPWH officials and explained to them the significance of the Bontoc's belief system in connection with the water at Tikitik spring. The elders argued that although they welcome the widening of roads for rural development, they were also concerned about the consequence of this initiative, as this might lead to the loss of their water supply. The *ato* elders advised them to perform a ritual at Tikitik before proceeding with the widening project. Following the advice from the elders, the DPWH men performed the ritual. Fortunately, the road widening went on without mishaps and water continued to flow from Tikitik spring, providing the water supply to the community even until now.

Myths, rituals and sacred water sites are essentially interlaced in the management of water resources in Bontoc society. Rituals are the life blood of the community. Performance of these rituals assures the community of their victory over the forces of chaos which can be kept under control. Rituals are meant to secure an ordered existence wherein god, nature and the community are placed in good rapport. As a consequence thereof, the community is safeguarded from disorder, and order is guaranteed for the year or the coming year. It is through ritual that the people can create a truce between themselves and chaos, since the cycle merely returns to its beginnings (Manochon 2009, 111). In the management of water resources water rituals are performed repeatedly to guarantee the continuous flow of abundant water and secure a harmonious existence with nature, spirits and the gods in the coming year or years.

The *manerwap* is a rain calling ritual which is still currently performed by the contemporary Bontok as part of their traditional water resource management. *Manerwap* is a peculiar ritual that makes Bontoc traditional water resource management distinct from other tribal water management in the Cordillera. This is a communal ritual calendared by the *ato*. It is usually performed every year and in the months of April or May when there is low rainfall, and water supply is scarce. After the elders' declaration of the *manerwap*, young men would be sent to all households within the area to summon able bodied men to assemble at the *ato*, with their *sokod* (shield and spear). From

among the men, a group would be chosen to go up the mountain, falls in a single line and walk to Mount Sagmayao or Mount Kaman-olo. History explains that Mount Sagmayao was the battlefield of two warring villages, Bontoc and Tocucan. According to the sacred Bontoc myth, Mount Kaman-olo is the site of Mount kalawitan where Lomauig made his descent when he came down to earth. While the men are slowly marching, they keep beating their wooden shields in a uniform rhythm. Beating of shields is interpreted as an act announcing to the spirits and to Lomauig that some *omato* (members of the *ato*) are coming. It is moreover required that the group observes complete silence while climbing uphill. When they reach a hill where there is a *fawi*, the group rests for a while and the leader offers a tobacco to the spirit of the *fawi* as a gesture of goodwill. Thereafter they continue their climb uphill until they reach the summit of Mount Kaman-olo or Mount Sagmayao (whichever mountain is traditionally designated to the *ato*). By the time the men reach the mountain top in the evening, they would build a fire and play the gongs. The leader would then pray to Lomauig, asking for rain. The group would spend overnight in the mountain top and would start the trip back home in the morning. On their way home, they would stop in the same place where there is a *fawi*. The leader would build a fire (*chentan*) and prays to the spirit that inhabits the *fawi*. The women would come bringing with them the *senget* (food for lunch) for the men. After taking a little rest, the men continue their journey back to the *ato*. The next day, the men would go to the river to take a bath and at the same time catch fish for lunch in the river. In the afternoon, they would go to the *ato* and beat the gongs signaling the start of the three-day affair of dancing at the *ato*. The neighboring *atos* that did not do the *manerwap* would perform the *mangiyag* before joining the three-day dancing and beating of gongs in their respective *ato*. The *mangiyag* ritual directs the men in each respective *ato* to go to the river, take a bath, catch fish and eat lunch in the river. Afterwards, they would go home and beat the gongs to signal the three-day dancing at their own *ato*. Based on history and experience, after the *manerwap* and *mangiyag* rituals, the rains would start to pour the area.

The Bontok's Psychological, Spiritual, and Symbolic Relationship with Water

Psychologically and spiritually, the traditional Bontok view water as the world of the embryo in the womb. This image is related to the image of seeds of new life buried under the ground; life is a cycle of birth, death and rebirth. This seeks significance in the way the Bontok people traditionally bury their dead babies in earthen jars. Earthen jars used as water or wine carrier in everyday life are shaped like the belly of a pregnant woman. Man is said to be a resident of water during conception and a resident of land after birth. That is, the unborn baby floats inside the womb of a woman and after birth resides on land; then goes back to the womb of death (grave). The analogy also points to the lizard and snake designs woven on Bontoc weaves and textiles as symbolic denizens of the collective unconscious since these are both residents of land and water.

These findings depict how symbols, spiritual values, rituals, myths and indigenous knowledge and practice demonstrate sustainable strategies in managing the community's water resources. This is so because of the traditional worldview embedded in the Bontoc's indigenous knowledge and practice, myths, rituals, and spirituality. Behind the indigenous knowledge and practice is a holistic view emphasizing the

symbiotic relationship between humans and nature. The people's perception and the meanings they give to water, influence the Bontok's decision in managing their water resources. The Bontoc's indigenous knowledge and practice in water management does not mean that it remains stagnant since it also undergoes an innovative process as it adapts to climate and environmental changes. It is for this reason that the people's traditional way of water resource management has become sustainable.

Conclusion

This study uncovered the Bontoc people's basic indigenous concepts on the management of water resources, which helped sustained the traditional management of water resources since the entry of colonialism and modernity. The underlying worldview that guides the Bontocs' management practice is that man is one with nature and, hence, man can never be above nature. Nature is respected and nurtured by the people and not subject for man's greed and exploitation. Secondly, the Bontoks believed that water could not be a private property nor is it a commodity for commerce. In the people's management practice, they followed the principle of sharing, communal ownership, equity, fairness, and cooperation. Lastly, there is a fundamental relationship between forest and water that permeates traditional management of water resources. This is evidenced in their forest code and construction of rice terraces and irrigation canals. But foremost is the Bontoc's concept that management of water resources is the responsibility of every member of the community.

Management of water resources in contemporary Bontoc society is operating within two management paradigms, namely: the western and the indigenous people's paradigm of water management. The municipality of Bontoc, as an indigenous community possesses traditional values or worldview that cannot be eroded by time and modernity. While it is true that the Bontoc municipal government adopted the western paradigm of management where it uses the bureaucratic approach of compartmentalizing sectors, some indigenous knowledge and practice in water resource management are still put into use. Nevertheless, the prevailing paradigm is the western approach, not because it is the most effective strategy of management but it is stamped by the government of the Philippines as the legitimate agency to manage water resources in Bontoc.

There would always be two competing worldviews (e.g. old and new worldviews) in so far as indigenous community development is concerned. Many times, the incoming worldview imposes its will on the community and eradicates the old. The people may accept the new idea on the surface but deep inside, they feel it does not actually work for them. Hence they still cling to their traditional knowledge and practice. The existence of two management paradigms is the actual scenario in the management of water resources in contemporary Bontoc society. The government through the Sangguniang Bayan and officials decide and make policies while the General Water Services Officer executes and implements the laws passed by the SB. Consequently, the people who stand to be affected by such water management are alienated and silenced.

While it is true that the people through their spirituality, and as exemplified in their myths and rituals, continue to indirectly participate in the management of water resources, there is a fear that said spirituality and indirect participation will eventually be lost and unknown to the incoming generations. It is generally observed that the government's attitude towards indigenous knowledge and practice is that of mere tolerance and respect to the old folks of the *ili* (village). When the old folks die, their knowledge and practice may die with them. Moreover, the present generation considers indigenous knowledge and practice obsolete and inapplicable for the modern age.

In sum, there is a growing water crisis in Bontoc, Mountain Province because the local government failed to recognize the legitimacy of the Bontoc people's indigenous knowledge and practice in the management of water resources. This study reveals that the traditional management of water resources uses the holistic approach blending the technical and the socio-cultural aspects. It is for this reason that the traditional Bontoc management of water resources had been sustainable through the years. However, the influences of globalization and colonial education in the Bontoc community continue to undermine this indigenous holistic approach in managing water resources.

Recommendations

In the light of the findings revealed in this study, it is recommended that:

- The municipal government of Bontoc through the General Water services takes into consideration the socio-cultural aspects of water management. It was the general observation in this study that the Bontoc General Water Services concentrates its management solely on the technical and economic values of water. Hence, the Sangguniang Bayan should propose a law incorporating indigenous knowledge and practice relative to water in the decisions and policies in managing water resources; and should moreover pass an ordinance integrating sacred water sites as part of the protected areas in the community.
- The academe, in cooperation with local government, should make further study through comprehensive assessment and research on how to interface indigenous knowledge and practice and the formal system of water resource management of the Bontoc General Water Services;
- The LGU should initiate policies that would expand the participation of the stakeholders in the water resource management. This strategy will help encourage collective empowerment and hence, would speed up the development of local communities.

References

- Bang-oa, Dictaan E. (2003). Traditional Management of Water resources in Besao
<http://www.law.arizona.edu/journals/AJICLA/AJICL2004vol1211molintas.pdf>
- Basco, Estrella. (2009). Indigenous Knowledge and Biodiversity Conservation Practices for the Conservation of the Rice Terraces in Mountain Province. "MPSPC Research Journal". Vol. 9 pp.191, 201.
- Cabrera, Vincent. (2009, Dec. 16). Old Tools for new climate problems. Philippine Daily Inquirer pp. A18.
- Carino, Delmar. (2009, April 21). Alarm button pressed to save Chico River. Philippine Daily Inquirer, pp. A17.
- Fry, Howard T. 1963. History of Mountain Province. Quezon City: New Day Publisher.
- Groenfeldt, David. Spirituality, Worldview, and Indigenous Knowledge
http://www.waterculture.org/Indigenous_Water_Values.html
- Guinabang, Linda. (2009). Baseline Survey for the Conservation of Rice Terraces in Mountain Province. "MPSPC Research Journal". Vol. 9 pp. 161.
- Lasimbang, Jannie. Natural Resource Management <http://regionalcentralbangkok.undp>
- Manochon, Antonina. (2009). Interpreting selected myths as expression of Bontoc worldview. Unpublished Master's Thesis, University of the Philippines.
- Olekesusi, Femi. Survey of Indigenous Water Management and Coping Mechanisms in Africa: Implications for Knowledge and Technology Policy
<<http://www.atpsnet.org/pubs/specialpaper/SPS5%202>>.
- Nicholas, Colin. (2009). Indigenous spirituality and governance. Kuala Lumpur: Arah Publications pp.17-26.
- UNESCO-IHP. (2007). Project on Water and Cultural Diversity
<http://www.unesco.org/water/ihp/pdf/wcd-conceptpaper.pdf>. HWC, pp.12

Networking and Risk Coping Behavior of Poor Households in Central Java, Indonesia

Nina Takashino

Graduate School of Agricultural and Life Sciences
The University of Tokyo, Japan
ntakashino@gmail.com

Jangkung Handoyo

Faculty of Agriculture
Gadjah Mada University, Indonesia
JHandoyoM@yahoo.com

Abstract

This paper provides evidences of how the rural poor make networks to cope with sudden income fall or unexpected expenditures. In August 2009, a survey was conducted to identify the risk coping strategies and network building of the poorest in eight agrarian communities in Central Java, Indonesia. We randomly selected 222 households who are all recipients of BLT (Bantuan Langsung Tunai) program, a direct cash aid program for the poor distributed by the Indonesian government. These respondents were asked about the household characteristics and how they utilize social networks when they face unexpected cash needs.

The study found out that villagers had difficulty in coping with unexpected circumstances (e.g. diseases). They had to borrow money from other people. The poor households in the area rarely go to the formal financial institutions. Instead, most of the villagers, including the poorest people joined self-help savings groups, from which, they borrow money in times of need.

Some of the findings of this study are the following: 1) Javanese villagers are still morally responsible to help elder people who are likely to ask for help; 2) the work place provides important occasion to form networks and affect personal lending behavior; and, 3) mutual help norm and practice tend to decline in developed communities with better opportunities for off-farm jobs.

Keywords; poverty, rural finance, network

Introduction

Villagers in the rural areas of the developing countries occasionally face sudden needs for cash, such as payment for the hospital expenses, rituals, event, and crop failure, etc. Risk sharing networks among friends and relatives are important source to finance such unexpected needs (Fafchamps & Lund, 2003). This paper discusses how the poor people make use of networks to cope with economic risk by using the data set on rural villagers' financial transactions in Central Java, Indonesia. This paper discusses 1) what kind of economic risk they face, 2) their coping mechanisms, 3) the operation of the self-help saving groups, and 4) the process of building personal networks.

Overview of Sample Hamlets

The survey was conducted in August 2008 and July 2009. The first round of survey involved 72 self-help neighboring administrative units (called RT in local language, one RT consists of 20 to 30 households), which were randomly chosen from eight hamlets (community 1 to 8) located in the rural areas of Yogyakarta Province in Java Island¹. The representatives were interviewed about their group characteristics and economic conditions. Table 1 shows the geographic conditions of the eight communities.

Table 1. Geographic conditions of eight communities

	Location	From city (km)	From bank (km)	No. of household (household)	No. of sample (person)	Bike owner (share)	Non farmer (share)	High School (share)	BLT recipients (share)
Community 1	Flat	10	0.5	333	349	0.85	0.55	0.47	0.14
Community 2	Flat	10	2.0	129	203	0.78	0.39	0.35	0.10
Community 3	Flat	10	2.0	172	248	0.8	0.4	0.29	0.06
Community 4	Flat	10	2.5	217	416	0.66	0.46	0.32	0.09
Community 5	Hilly	40	17	150	260	0.53	0.22	0.11	0.14
Community 6	Hilly	40	17	150	261	0.37	0.14	0.11	0.16
Community 7	Hilly	40	10	177	169	0.40	0.09	0.04	0.37
Community 8	Hilly	40	10	135	243	0.37	0.02	0.02	0.38
Total/Average	.	.	.	183	2149	0.62	0.32	0.24	0.17

Source: Survey 2008

The second round of investigation focused on the details of the risk coping behaviors of the poor households. The survey dwelled on risk coping strategies and network building of the poorest people in the same eight agrarian communities. We randomly selected 222 households from the recipients of BLT program (direct cash aid program for the poor distributed by Indonesia government). They were asked on household characteristics and how they utilize social networks when they face unexpected cash needs².

Results and Discussion

Household Characteristics

Four of the eight sample hamlets (community 1 to 4) are located on flat areas, and the rest (community 5 to 8) are situated in the hilly areas. Communities 1 to 4 are 10 kilometers from the center of Yogyakarta City, while Communities 5 to 8 are 40 kilometers away from the city. With favorable water conditions and good access to off-farm jobs, villagers' average income or savings in flat areas are higher than those in the hilly areas. Villagers' financial assets are reserved in the form of bank deposits, motorbikes, gold, livestock, and cash savings stored at house.

On the average, more than 62 percent of the respondents owned a motorbike. Most of the inhabitants are working on farms, while 32 percent of the villagers are engaged in off-farm activities as their main income source. There were about 24 percent high school graduates. When the Indonesian government operated the direct cash transfer program for the poor (Bantuan Langsung Tunai, BLT), 17 percent of the villagers are categorized as poor and received the aid. Eight communities fall under the different socioeconomic conditions ranging from a traditional agrarian society to a more commercial one (Figure 1). Empirical study shows how these differences affect villagers' network formation.

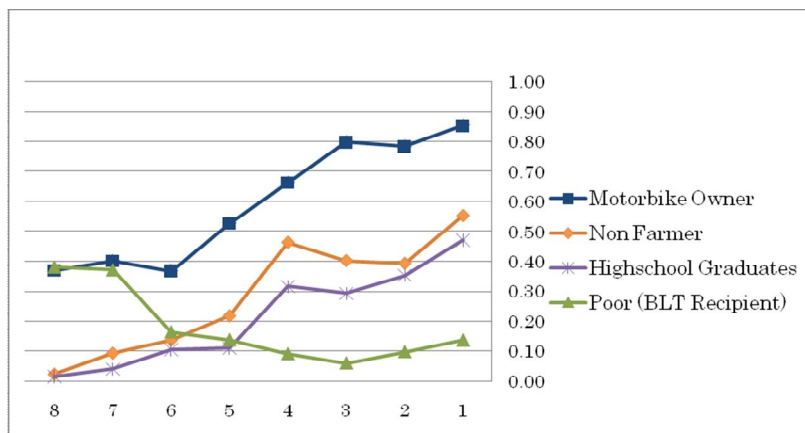


Figure 1. Development Stage of Eight Communities

Characteristics of BLT recipients

Table 2 shows the characteristics of the family members of BLT recipients. As shown in the previous section, village economy in flat areas is more developed and modernized than those in the hilly areas. Hence, the number of poor households in flat areas is small and most of them are old. The data on poor households shows a similar trend as indicated in Table 1 and Figure 1 (case of the whole range of income level). This validates the observation that there are more off-farm workers in flat areas than in hilly areas.

Table 2. Socioeconomic characteristics of the household respondents.

	Flat	Hilly	Total
No. of sample	78	144	222
Household characteristics			
age of head (years old)	55.4	51.9	53.1
widow (%)	10.3	4.6	6.6
no. of member (person)	3.8	3.8	3.8
Job of family member (%)			
Farmer	7.3	43.5	30.8
Trader	2.1	1.5	1.7
self employed	5.3	0.7	2.3
wage labor	26.9	11.5	16.9
Employee	2.8	1.1	1.7
others	41.6	36.0	38.0
Asset holdings (1000 rupiah)	3,409	4,761	4,286
Receive remittance (%)	34.6	7.6	17.1

Source: Survey 2008

Only a small number of land owners were included in the sample BLT households. While almost all the farmers in hilly areas cultivate their own land, a typical farmer in lowland area employs tenant contract. Therefore, some BLT recipients in lowland do not own their land and instead, cultivate the farm as a tenant.

Remittance comes two forms: the permanent annual (or monthly) transfer at a constant amount; and the temporary or need-driven remittance which often happens during a sharp drop in income or to meet unexpected consumption needs. There are more villagers in flat areas that receive remittances. This implies that the children of the BLT recipients have more financial resources. The villagers can accumulate their wealth in various forms, such as land, durable goods like TV, motorbikes or sewing machines, financial asset (gold or deposit), livestock, trees, etc.

Risk Coping Strategies

Source of Finance

Table 3 depicts how the villagers coped with actual needs for big expenditures and economic shocks in 2004 to 2009. For example, large amount of financial resources is needed for ritual events, diseases, and investment on education or housing. They can raise funds through their savings, livestock sale for a foreseen or planned event like wedding or even investment. A lower rate of borrowing is observed during the planned occasions and events. However, because many of the villagers could not use their own assets to cover unexpected events like diseases or funerals, they usually borrow money from others. The poorest people do not actively borrow for the purpose of productive investment.

Table 3. Big expenditure and source of finance.

	No.of shock (case)	Average amount (Rp.)	Source of finance				
			asset (%)	friends (%)	Arisan (%)	bank (%)	nothing (%)
School fee	63	1,397,968	23.8	28.6	12.7	4.8	30.2
Severe sick	62	2,076,629	25.8	51.6	6.5	1.6	22.6
Crop damage	26	1,426,600	34.6	30.8	.	.	30.8
Funeral	17	1,005,882	35.3	23.5	5.9	.	41.2
Wedding ceremony	16	1,937,333	12.5	25	12.5	6.3	43.8
Baby birth	5	614,375	.	40	.	.	40
House building	4	1,250,000	50	25	.	.	25
Lost job	3	316,667	33.3	.	.	.	66.7
Investment	3	4,666,667	33.3	66.7	.	.	0
Other	19	668,611	10.5	57.9	15.8	.	15.8
Total/Average	199	1,632,458	24.8	37.6	8.3	2.3	28.9

* More than one answer is allowed.

Source: Survey 2009

Table 4 describes the history of sample households who have been borrowing money for three years from September 2006 to August 2009. Sorting all borrowings by the lender's type, it clarifies different characteristics in their contracts. While the monthly interest rate of formal borrowing, loan from bank and cooperatives is lower (around 3.6 percent), the formal loan requires collateral in order to select repayable borrowers. Hence, some BLT recipients without sufficient assets could not borrow money from the formal lender³.

Table 4. Characteristics of the lending source.

	Friends	Arisan	Bank
No. of borrowing (case)	155	157	14
Amount (1000 rupiah)	394	100	1,700
Terms (month)	4	10	14
Interest rate (%/month)	1.1	4.4	3.6
Collateral (%)	1.3	1.3	78.6

Source: Survey 2009

Financial self- help groups in Indonesia are called *arisan*, which literally means cooperative endeavor or mutual help (Geertz 1962). *Arisan* is another source of loan. The group members of the *arisan* share and pool their resources, making relatively more effective as they provide ways to save and lend money to the poor households than that of the formal financial institutions (Takashino 2010)⁴. However, the amount of loan provided by *arisan* group is very small because the fund source is based on the members' contribution. The fund is only big enough to cover the unexpected needs of daily consumption of the households, but still far too small to invest in business or deal

with serious economic shock. Group-based loan is a possible solution to the fund constraint.

Loans from friends and relatives are actively chosen. When villagers borrow money from friends and relatives, they do not need to prepare any document or collateral, but rather they build on trust. Besides, lenders usually allow the borrowers to reschedule repayment of their loans. Because the amount of loan could not get over the lenders' personal asset holdings, it is typically smaller than those offered by the formal lending institutions such as the banks. The lenders do not request any interest payments from friends and relatives and this kind of loan transaction is common in developing countries in Southeast Asia (Fafchamps 1999).

Personal Networks

From the viewpoint of risk coping, personal loans among friends have much more significance than gift giving. Gift-giving is often sent for the ritual events such as wedding and funeral. In addition, the average amount of gift-giving is very small (Takashino 2009). Table 5 shows that the significant factors to form networks are kinship and membership to the same *arisan* group.

Table 5. Personal loan transactions in past 1 year.

	Flat	hilly
No. of loan borrowed (case)	0.76	0.65
Amount (Rp./case)	415,633	441,202
Kinship (%)	50.3	43.9
<i>Arisan</i> member (%)	36.9	60.6
Economic status (%)		
Higher	82.6	49.0
Same	17.4	51.0
Lower	0.0	0.0
His employer (%)	11.0	0.0

Source: Survey 2009

Loans from friends or relatives with higher economic status are observed more often in the lowland compared to the hilly areas. The data suggests that 1) the share of poor households in hilly areas is high and the villagers have to help each other; 2) the poor households' neighbors (possible lenders) in flat areas are comparatively rich; and, 3) the majority of the poor households in flat areas are old retired people who could easily get help from the rich friends and relatives.

Empirical Study

Estimation Model

In order to examine the determinants of network formation, we regressed the number of networks (friends or relatives who the respondents can ask help from when in need, denoted by N) on household characteristics variables in the following manner:

$$N = \beta_{01} + \beta_{11} X_1 + \beta_{21} X_2 + \beta_{31} X_3 + \varepsilon \quad (1)$$

where X_1 denotes a vector of variables on household characteristics such as age of household head and number of family labor and dependents. X_2 and X_3 are a variable on the level of modernization of the community, and location dummy (the definitions of these variables are presented in table 6). β_{ij} is a coefficient that reflects the effects of variable i in equation j . ε is an error term. Since the dependent variable, N is truncated variable (the variable is not smaller than zero), Tobit estimation method is applied for the regression.

Table 6. Definitions of the variables for regression.

Variables	Definitions	Average	S. D.
Network	No. of persons who will help respondent (person)	1.874	1.356
Age	Age of household head (year)	53.140	14.069
Student	Ratio of family member 15 and younger (share)	0.203	0.194
Old	Ratio of family member 65 and elder (share)	0.361	0.273
Labor	Number of family labor (person)	2.059	0.980
Junior high	Ratio of junior highs school graduate/ labor (share)	0.177	0.227
High school	Ratio of highschool graduate/ labor (share)	0.113	0.186
Wage	Ratio of wage labor/ labor (share)	0.182	0.279
Self-employed	Ratio of self-employed/ labor (share)	0.023	0.105
Trader	Ratio of trader/ labor (share)	0.018	0.091
Employee	Ratio of employee/ labor (share)	0.018	0.076
Land	Area of land holding (square meter)	1.525	3.164
Farmers ratio	Ratio of farmer in RT (neighboring group)	0.699	0.218
Lowland	Dummy variables taking 1 for hamlets in lowland	0.351	0.478

Source: 2009 surveys

Results

Results show that a household with high ratio of old people could expect to get more help from friends or relatives than others (Table 7). This result is intuitively understandable because older people can make more networks through his or her personal experience and some of them might have children to ask help from. Also, this result suggests that Javanese villagers still keep a strong sense of moral or social norm to help older people.

Table 7. Results of Tobit estimation.

	Coefficient	P-value
Constant	0.720	0.65
Age	-0.020	0.71
Age squared	0.000	0.64
Student	-0.965	0.16
Old	1.113	0.03 **
Labor	0.060	0.60
Junior high	1.033	0.02 **
High school	1.359	0.03 **
Wage	-0.646	0.12
Self-employed	0.146	0.88
Trader	1.846	0.09 *
Employee	-3.030	0.03 **
Land	-0.072	0.05 **
Farmers' ratio	1.122	0.06 *
Lowland	0.549	0.07 **
sigma	1.417	0.00 **
Sample size	222	
Log likelihood	-371.737	

Source: 2009 survey

1) Dependent variable is number of persons who will help

2) *, ** indicate significance at the 10% and 5% levels.

Looking at the job effects, we found that trader has more chance of networking to borrow money because they frequently encounter cash needs in their daily transactions and they are already used to giving or getting personal loans. On the contrary, off-farm employees like factory laborers or shop clerks tend to have fewer friends to ask help from than agricultural farmers. This suggests that farming activities are important opportunities for villagers to establish close relationships, trust and strengthen networks between and among them. Even after controlling these job effects, it revealed that a landless household has still a smaller number of networks than the others.

Positive coefficient of farmers' ratio of RT shows another interesting implication. It implies that the more neighbors work on farm in RT, a member household tends to have more friends to ask help from. In other words, as economy develops and more residence in a community starts engaging in off-farm activities (typically outside the community), mutual help norm and practice tends to decline. After controlling all the above effects, it was observed that the poor in lowlands tend to get more help than those in the hilly areas. This result reflects the higher number of non-poor households in the lowland communities.

Conclusion

This study clarified the determinants of how respondents' mutual help networks are formed among family and neighbors in Java, Indonesia. The major findings are as follows: 1) Javanese villagers still keep a strong sense of moral to help older people and retired people have more chance to ask help from; 2) workplace serves as an opportunity to form networks and one's job type affects personal lending behavior in the research fields; and, 3) mutual help norm and practice tends to decline in developed community with increasing opportunity to get off-farm jobs.

Summary on risk coping behavior shows that many villagers could not cover unexpected events, like diseases, by their own assets and they need to borrow money. The poorest people do not actively borrow for the purpose of productive investment because they do not have good investment opportunities. Therefore, the conduct of training to manage small business or introduction of commercial crops would raise their productivity and activate the villagers' borrowing.

Also, it is shown that poor households in the study area rarely use the formal financial institutions. Data shows that the most of villagers including the poorest people join *arisan* activities in the research site. The result indicate that it is highly possible to utilize the existing *arisan* group, even in less developed areas, as a recipient of lending program for the poor expecting high repayment. The study suggests policy makers or designers of group-lending programs to enhance the use of *arisan* group ties of solidarity.

Acknowledgment

We would like to express our appreciation to Professor Seiichi Fukui of Kyoto University, and staff of Gadjah Mada University, and all the enumerators for the support given during the conduct of this research. We also thank Dr. Victoria Wai-lan Yeung for her valuable comments. This work was supported by Grant-in-Aid for JSPS Fellows.

Notes

1. See Iwamoto and Hartono (2008) for more details on research hamlets.
2. SMERU (2006) reports an assessment of the first phase of BLT program.
3. Assets used as collateral include certificate of land, motorbike, bicycle, sewing machine, certificate of income, personal recommendation, car, TV, and so on.
4. This kind of financial self help group is often called ROSCA (Rotating Saving and Credit Associations) in the literature. Such self help groups can be found around the world: kou in Japan, chit fund in India, partner in Jamaica and more, with slight differences in their structures and management. Detailed descriptions and comparative analysis of ROSCAs around the world were given by Geerts (1962) and Ardener (1964).

References

- Ardener, S. 1964. "The Comparative Study of Rotating Credit Associations." *Journal of the Royal Anthropological Institute* Vol.94, No. 2. pp. 201-229.
- Fafchamps, M. 1999. "Risk Sharing and Quasi-Credit." *Journal of International Trade and Economic Development* Vol.8. No. 3. pp. 257-278.
- Fafchamps, M., and Lund, S. 2003. "Risk-Sharing Networks in Rural Philippines," *Journal of Development Economics* Vol.71, No. 2 . pp. 261-287.
- Geertz, C. 1962 "The Rotating Credit Association: A 'Middle Rung' in Development." *Economic Development and Cultural Change* Vol. 10, No. 3. pp. 241-263.
- Iwamoto N. and Hartono S. 2008. *Economic Structure and Social Institutions in Rural Java: A Case Study in Yogyakarta*, Gajah Madah University Press
- Takashino, N. 2009. "Empirical Analysis on Rural Households' Borrowing Behavior: The Case of Central Java." *Asia-Pacific Journal of Rural Development* Vol.19, No. 1. pp. 67-88.
- Takashino, N., and Mulyo, J. H. 2010. "Financial Self-help Groups and Economic Development." Center for Experimental Research in Social Sciences Working Paper Series No. 111 April 13, 2010
- SUMERU. 2006. "A Rapid Appraisal of The Implementation of the 2005 Direct Cash Transfer Program in Indonesia: A Case Study in Five Kabupaten/Kota"

The Birth of a Producer in Rural Areas: Their New Role in Maintaining and Rejuvenating Small Towns and Villages in Modern Japanese Rural Society

Rieko Tsuru

Faculty of Sociology

KIBI International University, Japan

tsuru@kiui.ac.jp

Abstract

This paper highlights the new role in maintaining and rejuvenating small rural areas, using the case of the Uji-cho in Takahashi city, Okayama Prefecture in Japan. The Inaka no Producer or “The Producer of Rural Areas” played a key role in bringing out the allure of the area and promoting it to the outside world in various means. As such, the small local communities are encouraged to revitalize their culture, and maintain their traditional activities.

Among the activities that are being initiated by the producers include the annual celebration of traditional festivals that are unique to the communities and serve as venue to renew partnerships and relationships among the community members; exchange program between the urban and rural people; marketing of the farmers’ produce to the sales depots instead of going through an urban mediator; managing restaurants and tourist home for travelers. The rural people have been stereotyped as “simple, lagging behind, and are living in inconvenient areas. This stereotyping has challenged the local people to articulate with the other people, particularly with the tourists, about their ways of life in the rural areas, and indeed their experiences are unique and distinct.

Keywords: producer of rural areas, local identity

Introduction

The issue of a consumed rural society

Recently, rural studies in Japan have been focusing on the revitalization of rural societies, and the sustainable development of agriculture and rural society. Studies about the connection between the rural society and the outside world, including the city influences are getting more importance. For example, the current themes of the Japanese Rural Studies Association are along the areas of consumed rural society in 2004; new evolution in green tourism in 2006; revitalization of the hamlet and Mura in 2008; and, the relationship of the rural culture with the urban or city space in 2010.

Tachikawa Masashi (2005) said that under the post-productivist transition, rural spaces are merchandised and the situation of the consumed rural society is expanding in modern Japan. This paper revolves around the huge influences of the outside community to the rural society; how the situation of the consumed rural society is

spreading; how the people in rural society accept these changes; and, how they try to form a relationship with urban people inside the rural community. Specifically, this paper shows the facts about the contributions of the producer of the rural areas. A producer is a person who lives in the rural area and promotes the beauty of the areas to the communities outside the area.

The producer was also born, and perhaps has also lived in the Japanese rural societies. He/She may have realized the natural beauty of the rural areas, which enabled him/her to promote their areas, which, to some extent, has caused some changes within the rural communities.

The perspectives of producing a rural society are very radical. In modern Japan, it is very important to be conscious about who labels the rural society; who creates the images of rural and agricultural communities? The local communities have to define their own identities so that their culture will not be consumed by the urban or metropolitan societies. This paper specifically focuses on the producer of a rural area, named Masayasu Ooba, who connects the activities in Uji-cho. Most of the information came from the outsiders, and the data is based on the series of researches that have been conducted since the mid-1990s.

The Community Activities in Uji-cho Takahashi-shi Okayama Prefecture

The research area

The research area is the Uji-cho Takahashi-shi Okayama Prefecture, a mountainous area with an altitude of 350 meters above sea level. It is located in the North West of Takahashi-shi. While the main industry in this area is agriculture, most the farmers are also engaged in other off-farm jobs, from which they get higher income. Since 1889, the people in Uji-cho have thought that their community has already attained autonomy, in spite of some modifications from the government. Since mid-1950s the population has been decreasing drastically. In 1985, the issue of integration of junior high school created confusion among the people. In March 1990, the school was integrated, and after a series of discussions and deliberations, there was a consensus to accept the school integration in order to secure the future of the area. In 1992, Uji-cho decided to implement a project in rural area resort development. As a result, it has started some community businesses. In April 2008, the number of households was 305, the population was 773, and the rate of elderly person was 47.2%. It is one of the most aging areas, but is famous for being a very vigorous area.

Community activities in Uji-cho

The community activities in Uji-cho revolved around rural business and gaining autonomy. People recognized that the former is not related so much on monetary aspects or earnings, but rather relates to the traditional and required activities of the hamlet or region, while the latter is concerned on the earnings, particularly from the rural resort projects. These community activities have brought about four effects to the rural area.

First, the community had to develop a lot of people who have excellent talents. Second, there had been some changes in the values and behavior pattern. The old Uji-cho used to be a very common rural area which is characterized as conservative, sexist and a closed society. With the integration of the junior high school, the women and elderly and newcomers are being recognized as important actors in their rural businesses. They work now by achievement and not by attribution. Today, Uji-cho is being recognized by the outside communities. Third, the principle of an organized Mura has changed. Formerly, the fundamental unit is *Ie*. The community members used to be absent from community meetings, instead, they were just being represented. But now, the people actively participate in the community meetings. Lastly, the rural people in Uji-cho are establishing and revitalizing their local identity. While the area has faced a declining birth rate, aging and depopulation, the people have established their positive outlooks despite these problems.

Recognizing the “Producer” of the Rural Areas

Who is the person, Ooba Masayasu?

A number of talented and creative people join the various community activities in Uji-cho. Ooba Masayasu is one of them. He has established himself as a producer of rural areas. Ooba was born in 1955 in Uji-cho and served as the successor of a farmer's house. After graduating from high school, he worked in the city hall in Takahashi for almost 30 years. He quit the job when he was 50 years old. While working in the city hall, he started doing many community activities on his own. Ooba has grown up through the traditional community activities. Building from his experiences, he had developed a new perspective that is, being a producer of rural areas.

Ooba does not worry so much about the financial matters when making important choices in his life. When Ooba quit his job, most of the people were very surprised because he did not look poor or rich. He is good at doing community activities and living his daily life without much money. The reason is that he is not stingy or a penny pincher and he has the capacity to stand on his own feet. His friends also help him in social networking with minimum cost or no cost at all.

Ooba has agricultural knowledge and skills to cultivate rice and vegetables, decorate interiors and exteriors excellently, and cook and so on. In other words, he has a lot of skills. Ooba does only what he loves to do. Finally, Ooba is a friendly person. He makes friend or acquaintances easily. He enjoys encountering strangers and he is open-minded. He knows his limits; and is good at asking for help. He makes the most from his social network. His favorite phrase is, “it is very limited what people can do by themselves.”

Ooba's community activities

Ooba had lived with his family after graduation as a successor of *Ie* and he had worked at the city hall for a number of years. On weekends, he is usually engaged in home management, agriculture, and in community activities and rural businesses in

Uji-cho. He has been doing community activities in Uji-cho for almost 40 years and the rural businesses for about 20 years. He has been organizing music and theater events for almost 20 years.

Ooba's activities are composed of two parts: performing community activities and organizing events in the rural areas. Both insiders and outsiders see Ooba as a producer of rural areas. When Ooba was working as a clerk at the city hall, he has already moved in many areas. In the mid-1980s local people organized a social movement against the issue of integration of the junior high school. Ooba led the movement and published the community paper "kwaraban".

Activities that promote the revitalization of agriculture in rural areas

Ooba is a member of the workshop "furusato nouhou kenkyuukai (the workshop for study of local agriculture)". This group has already done rice-duck farming, organic farming and held events such as exchange between city people and rural people. He had initiated the improvement of the cherry blossom park in Uji-cho. Sometimes, he would set up spaces to sell his products along the national highway and he has participated in a market "kyoubashi asaichi (Kyobashi morning market)" in Okayama.

Promoting the rural culture

Ooba is interested in music and theater. Hidaka was a stage actor in Tokyo and moved to Okayama, where he worked in a historical theme park. Ooba had been a follower of Hidaka for a long time and he had studied how to plan, hold, produce, and manage him. Because of his efforts, he has done some events in the resort facility "moto nakata-tei kurayashiki". He has tried organizing cultural shows and events in Uji-cho, so people need not go to Tokyo or Osaka to watch band performances and concerts. There were positive feedbacks on the cultural shows and band performances that were organized on Uji-cho.

Planning and managing events in the rural areas

Since early 1990s, Ooba has developed activities to plan, manage and hold events with the local people or outside people. He used a dirt floor as the main event center in the resort facility "moto nakata-tei kurayashiki". At that time, he had organized a social network called the "kaze no kaigi (the forum of winds)", to carry out the events. He has also helped his friends or acquaintances in organizing local events.

Uji-cho is famous for organic farming and rice-duck farming in Takahasi and Okayama Prefecture. The social group "furusato nouhou kenkyuukai (the workshop for studying local agriculture)" has been performing the main role. The events, museum and café that were produced and managed by Ooba resulted in partnerships and linkages. The "moto nakata tei kurayashiki" is a place for connecting outsiders with rural people. After quitting the job, he has renovated the dirt floor in the "moto nakata tei kurayashiki" for a mini hall and he has renovated storehouses for mini gallery and museum, and renovated "nagaya mon (the gate of row house)" for a café (Japanese style).

with the couple of new comers. In April 2008, the café and museum was opened. Since, then, the moto nakata tei has become very popular.

In September 2009, Ooba renovated an old house in Hukiya that is located in Nariwa-cho in Takahashi, about 8 km from Uji-cho. In the beginning, he wanted to make a shop for Shioda yaki (the pottery Shioda), but some circumstances arose, so, he changed the concept of the café to an art shop. Now, he and his friend have taken turns to tend the store. He says that the keywords are the renovation of old house, lifestyle including arts, design of region. Fukiya is famous for the old row houses along the street as in the Meiji era, which has been preserved by the national government. But the region has faced depopulation, thus, the local people have been revitalizing.

Conclusion

This paper clarified that through Ooba's genuine concern and initiatives of being a "producer of a rural area", the rural society was prevented from being consumed by the urban society. Ooba facilitated the rural people and the outsiders to communicate and build linkages by organizing local events. Through Ooba, the rural areas are being revitalized.

References

- Akitsu, Motoki, 2008, "chiiki no yutakasa he no apurouchi (an approach for the rich of region)", *Journal of Rural Problem*, 169 (in Japanese)
- Tachikawa, Masashi, 2005, "Posutoseisanshugi he no Ikou to Nouson ni taisuru Manazashi no Henryou (Post-Productivist Transition of Rural Japan and Transformation of its Social Representation), *Annual Bulletin of Rural Studies*, 41:7-40, Tokyo, Nousangyoson Bunka Kyokai (in Japanese)
- Tsuru, Rieko, 2009, "nouson bijinesu wa shuuraku wo saisei dekiruka (Can Rural Business revitalize a Hamlet and Mura?)", *Annual Bulletin of Rural Studies*, 45:121-161, Tokyo, Nousangyoson Bunka Kyokai (in Japanese)

Migration and Livelihood Strategies in Thailand: A Case of Mae Sai Non-Citizen Resident¹

Chanthawong Sasiprapha

*Lecturer, Department of Sociology and Anthropology
Faculty of Humanities and Social Sciences
Mahasarakham University, Thailand
sasiprapha.c@msu.ac.th*

Abstract

The migration of Myanmar nationals to Thailand is one of the largest movements of migrants in Southeast Asia. Recent estimates indicate that up to two million people from Burma currently reside in Thailand. There are many factors that contributed to this mass exodus, but the vast majority of people leaving Burma are clearly fleeing persecution, fear and human rights abuses. While the initial reasons for leaving may be expressed in economic terms, underlying causes surface that explain the realities of their lives in Burma and their vulnerabilities upon return. For most, it is the inability to survive or find safety in their home country that causes them to leave.

Some migrants from Myanmar³, have naturalized in Thailand. The Card System in Thailand controls the population of the non-citizens. Being non-citizens not only excluded the migrants from any rights that a citizen enjoys, but more importantly, they are also deprived of a number of opportunities. The migrants are left with few choices, often willingly submitting to exploitative practices. However, the study shows that, overall, migrants refuse to capitulate to these pressures. Becoming Thai-Citizen encourages the migrants to maintain, secure and improve their livelihoods. They take a range of steps, individually, household and in groups, aimed at initiating and expanding their enfranchisement as Thai citizens. These initiatives include tactics aimed at altering Thai perceptions of their involvement in drug production and use, as well as the strength of their 'Thainess' – for example, through demonstrating loyalty to the King of Thailand and the Thai state, use of the Thai language, and other aspects of Thai culture.

Keywords: migrant, livelihood, livelihoods strategies, citizenship

¹ This article is base on field work data of my thesis: Chanthawong Sasiprapha. 2009. "A Discourse on the Meaning of Citizenship and Negotiations by Minority Groups".

³ For the purpose of this paper, I use the term "Burmese" to connote all people from Myanmar, not just ethnic Burmans. The use of "Burmese" is due to logistical reasons; the vast majority of statistical data collected by nongovernmental, intergovernmental, and governmental agencies have not made distinctions based on specific ethnicity. The term's usage is not meant to marginalize the diverse peoples of Myanmar.

Introduction

Mobility and cross-border migration from and within Myanmar into neighboring countries has been increasing rapidly over the past decade. The number of people moving into Thailand has been growing consistently since 1988 with only a temporary decrease recorded in 1999, following Thai government crackdowns, arrests and deportations of undocumented migrants back to Myanmar. By year 2000, the number of migrants recognized by Thai Government officials reached two million, nearly double its 1998 estimates.

The majority of migrants from Myanmar are fleeing civil war, political persecution and/or social, economic and cultural abuses. For most, the various types of human rights violations are intertwined and inseparable. Often times, the first move for those facing abuses at home is to relocate within Burma and stay near their home and farmland. However, many find it impossible to survive on the limited available resources while facing ongoing harassment and denial of their basic rights. Finally, often as a last resort or in desperation, the decision is made to cross the border into Thailand.⁴ The conflict and crisis in Myanmar has had an unprecedented impact on migration and mobility, restricting and blocking physical movement of people and livestock with dire consequences for livelihoods. Migration has been a common livelihood strategy for people in Myanmar, especially ethnic minority groups to search for a better or more secure livelihood.

People from Myanmar who migrate across national borders temporarily, yet, nearly every migration flow lead to some long-term or permanent of settlement. In this paper, I will focus on permanent settlement migrant. Some of them, of course, have been naturalized and have gained their legal status. However, many of them are irregular/undocumented migrants, which means, they have neither Thai, nor any nationality, nor citizen rights. Being, non-citizen resident lead them to live under the lack of right. They have no access to all types of assets and basic livelihoods means, including legal rights. For example, they have no legal rights to land ownership, housing, vehicle, etc. They are not allowed to travel beyond provincial boundaries, and therefore, children of migrants could not study at higher level. They have no political rights at all levels. Without Thai identity cards, they cannot be legally hired; and being illegal workers they are underpaid and many times unpaid. However, these migrants managed to survive, and many times made their voices heard. With limited access to livelihood assets and citizenship rights, rehabilitation, negotiation, and formulation of livelihood strategies, this paper aims to understand the livelihoods strategies of these migrants.

⁴ Federation of Trade Unions-Burma (FTUB). (2001). *Migration from Burma*. Bangkok: Author.

Migration: Livelihood and Livelihood Strategy

It is clear that a thorough understanding of the interrelationship between migration and livelihood is essential in an era that is characterized by increasing human mobility (IOM, 2003:45-49). Migration is one of the major components of population change, and has been an integral part of livelihood diversification across many developing countries for at least the last century (Agesa & Agesa, 1999:12). However, over time, and in different places, it has taken a number of different forms. This process has included internal, regional and international movements that exists in widely different demographic contexts and cuts across class and skill boundaries (Drinkwater & Rusinow, 1999:5).

Migration is generally defined as the spatial mobility of people between one geographical location and another, generally involving a change of residence from a place of origin to a place of destination. It is a difficult concept to define because it includes people who move for different reasons across different spaces. A migrant can be a person who moves to another city or town within a nation; a refugee who crosses an international border to escape religious or political persecution; a jobseeker who moves to another country for better economic opportunity. Migration is, therefore, universally acknowledged as one of the most important sustainable livelihood strategies adopted by individuals, households or communities to enhance their economic capacity. The importance impact of migration emerges not only from the movement of people between places, but also from its influence on the lives of individuals, households and infrastructures.

The word 'livelihood' can be used in many different ways. The following definition captures the broad notion of livelihoods understood here: 'A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living (Carney 1998). Livelihood strategy can then be defined as a strategic or deliberate choice of a combination of activities by households and their individual members to maintain, secure and improve their livelihoods. In context, migration can be seen as one of the main strategies to diversify, secure and potentially, durably improve livelihood, often in combination with other strategies. (McDowell and De Haan 1997:3) Livelihood strategies aim to analyze and understand the typical levels of human, social, economic and natural capital that are possessed by different types of households and the nature of production, income and exchange activities.

In this paper, migration can be seen as one of the main strategies to diversify, secure and potentially, durably improve livelihoods, often in combination with other strategies, such as becoming a citizen of Thai-State. Instead of just a short-term survival or crisis-coping strategy, becoming a citizen is seen as a way to improve livelihoods and secure the future.

Migration and Citizenship: What is Meant to be a Citizen?

Migration is seen through the lenses of particular national conceptions of citizenship, and this perception of migrants feeds back into ideas about citizenship. The concept of citizenship defines an individual's legal status within a nation-state, to be a citizen means to have certain rights and duties which others, non-citizens, do not have.⁵ All sovereign states regulate the movement of people to and from their territory and control their access to the benefits of the modern welfare state, as distributive justice implies the existence of people who are not members and who are therefore excluded. In this sense, we can define citizenship broadly as a status of full and equal membership in a self-governing political community that entails rights and obligations and is supported by certain virtues.⁶

Migrants are subject to the laws of their state of residence, but they are not citizens because they have not entered the social contract that established the legitimate political authority of this country. At the same time, they may remain under the authority of the sending state if there are international agreements under which states mutually recognize external citizenship rights of foreigners, for example to diplomatic protection. First, while migrants have full obligations to obey the law of the host society, their rights depend on external protection provided by their foreign citizenship and international treaties. They have no claim to equal rights within the host society. This does not mean that foreigners are, in all respects, in the worse situation. In an international perspective on migration, the lack of internal standards of equality will, however, justifies extensive discrimination of foreign residents in all areas where rights require positive provision of benefits by the state rather than non-interference with individual liberties. Second, because the migrants' status remains defined by their foreign nationality, their right to stay is always conditional. Only citizens have an unconditional right of residence in their country and of (re)-admission after staying abroad. Foreign nationals remain guests who may always be asked to leave and who have no right to return. Without the rights conferred by citizenship, they have few avenues for redressing abuses, and little access to resources that could help them build better lives.

⁵ U K Preuss, 'Citizenship and Identity: Aspects of a Political Theory of Citizenship' in R Bellamy, V Bufacchi and D Castiglione, eds., *Democracy and Constitutional Culture*, (London, Lothian Foundation Press, 1995), p.107.

⁶ Citizenship and nationality are two overlapping and largely interchangeable terms. While the definition of "nationality" includes the legal status of membership in a State, it is also frequently linked to the concept of membership in a particular ethnic group that may involve more than one geographic location and that may cross political boundaries. Some States have laws that make distinctions between citizenship and nationality. In this Section, we are primarily concerned with the laws and policies surrounding the status of persons in States. While the terms "citizenship" and "nationality" can be interchangeable, for the sake of clarity the term "citizenship" will be used wherever possible.

Becoming a Citizen as Livelihood Strategy: Case of Baan Pha, Mae Sai

The town of Mae Sai is one among a cluster of Thai border towns at the quadrangle of the core border region of Myanmar, Lao, Thailand, and China. The town is a center of border trade and tourism directly connected to Myanmar. Geographically, Mae Sai is the northernmost town of Thailand, where the northern highway ends. Mae Sai is 890 kilometers from Bangkok, and is 62 kilometers from the provincial town. To the eastern side of Mae Sai is Chiang Saen (30 kms) where all the small rivers join Mekong river. Chiang Saen is where the notorious "Golden Triangle" (Thai, Myanmar, and Lao) of opium trade and production locates. Mae Sai district's area is 285 square kilometers while Mae Sai town (the municipality area or the urban core) is 5.13 square kilometers. The registered population of Mae Sai district is 99,727 inhabitants. Included as non-citizen residents are mostly in the categories of Community of Highlanders (Green with Red Rim 7,461), Illegal Immigrant from Myanmar (Orange and Purple 3,220), Displaced Person Who Has Burmese Nationality (Pink 2,023) Haw Refugees (Yellow 1,670), Tai-Lues (Orange 1,062), Independent Haws (White with Orange Rim 825), and Highlanders (Blue Card 523) (Source: Development Plan of Mae Sai District, 2003). There are 21,816 people living in the municipality. Mae Sai is in the hill and valley area surrounded by agricultural lands. It is the third largest district of Chiang Rai province next to the provincial district of Chiang Rai (Amphoe Muang) and Mae Chan district.

Mae Sai is also the largest border town of the north in terms of the registered population. Mae Sai also literally means Sai river or Nam Mae Sai (Mae is mother in Thai and the Thais refer to river as mother who gives life). Sai River starts from the Shan state down to Mae Sai and connects eastward to the Mae Khong River at Chiang Saen town. Sai river is the northern boundary of Thailand to Tachilek town of the Shan state of Myanmar at 20° 28' N. Sai river is the northern boundary of Thailand to Tachilek town of the Shan state of Myanmar at 20° 28' N. This boundary was brought into an agreement between the British Burma colony and the Siamese government as the northernmost boundary of Siam (or Thailand) and British Burma in 1892. (Pongsawat 2007, 207-215)

Baan Pha is a small village located in Mae Sai. Baan Pha is five kilometers from Thachilek check point. Land of village belongs to the Fine Arts Department. Barb leak barrier stretched around the village. They have no right to land property. Before migration to Thailand, most migrants derived their livelihood from agriculture. But after settling in Baan Pha, they have no land asset. They were forced to engage in non-farm sector to survive. People in the village are principally engaged in trade at Tha Chilek border market, day labour, and construction work.

The study revealed that the livelihood strategies of migrants have changed to reflect the shift from their former rural-based farming systems to their new, urbanized environments. After settlement in urban areas, the migrant livelihood can be characterized as: (i) the transition from predominantly rural farming has led to semi-urbanized livelihood strategies that are inadequate and insecure; (ii) the livelihoods domain has expanded to incorporate multiple settings that span local urban, rural and

the wider transnational environments. After settlement and living as non-citizen residents, their livelihoods shifted to those that are linked with urbanization.

In 2008, Baan Pha housed approximately 350 inhabitants with 81 households living in the village. Only eight (8) people are Thai citizens. The remaining villagers are non citizen-residents.⁷ Majority of those identified as migrants entering Thailand from Burma are fleeing civil war, political persecution and/or social, economic and cultural abuses. People in the village hold different types of cards: highlanders, illegal Immigrant from Myanmar, displaced person who has Burmese nationality, Tai-Lues, highlanders, non registration status card, and the worst is some of them are undocumented people. Some of them have lived five, ten, even twenty or more years-and some, their entire lives. The first group of migrants came to settle in this village about 35 years ago. Being away from their homeland, they do not belong to the places where they live now. They are disconnected from their community, culture and traditions, unable to take part in festivals, fairs, religious and social functions, which are an integral part of their lives, thus, losing their sense of identity. Today, the third generation of the first migrant settlers is found. But still, they are denied of rights and status as Thai citizens and have not obtained Thai nationalities.⁸ Although migrant had left their country of origin against a background of great uncertainty, the migrant from Myanmar have managed to establish self-reliant and dignified lives in Thai.

Non-citizen residents in Thai society are not able to register births or marriages. As a result, they do not have access to social welfare and benefits provided by Thai Government such as state-sponsored education and public health care services through the national health care plan. They are also restricted in their freedom of movement, financial hardship and land property. They will not be able to own property, sign contracts and get an employment contract. Furthermore, without citizenship right, they have to live in fear of arrest, detention and deportation back across the border. Because they have no citizen rights, they have no access to legal rights to all types of assets and basic livelihoods means. They are not allowed to travel beyond provincial boundaries and cannot be legally hired making them illegal workers.

Migrants have been increasingly portrayed as marginalized victims with no rights. They are a particularly disadvantaged group, lacking resident rights and legal protection. The restricted economic, legal and social conditions and resource generally make migrant in the severe and unfair conditions. However, there has been little

⁷ According to nationality law there are two main principles to gain nationality and citizenship. In Thai, nationality law base on *Jus sanguinis*

- *Jus soli* Acquisition of citizenship by birthplace, sometimes in connection with additional conditions; for example, at least one parent having the right to permanent residence, or the birth of one parent in the territory of the host State
- *Jus sanguinis* Acquisition of citizenship by descent from one parent, resulting in dual citizenship if parents are of different citizenship

⁸ The rules of becoming a citizen in various countries are complex and have undergone change in recent year. In Thai case, *ius sanguinis* and nation identity is the predominate principle to gain Thai citizenship.

emphasis on their life realities, how they strategize to survive on a day-to-day basis. To be able to access any state welfare and the right to live, one needs to acquire Thai citizenship. Therefore, becoming a citizen is a main livelihood strategy.

Conclusion

Becoming a citizen is clearly important livelihood strategy for migrant, gaining formal access to citizenship-symbolized by getting ID card or passport of the country of resident- is only one aspect of this. Migrant who become non citizen resident believe that become a citizen will help them to be able to access, material and social resources.

References

Journal Articles

- Agesa, J.& Agesa, R. 1999. "Gender Differences in the Incidence of Rural to Urban Migration: Evidence from Kenya" *The Journal of Development Studies*, Vol. 35 (6): 36-58.
- De Haan, A. 1999. "Livelihoods and Poverty: The Role of Migration." *Journal of Development Studies*, 36:1-47.
- Murray, C. 2000. "Changing Livelihoods; The Free State, 1990s". in *African Studies*, Vol.59. No. 1, pp. 115-142.

Book Article:

- Bussayarat Kanjanadit. 2008. *Survival Strategies of Migrant Workers from Myanmar: A Case Study in Bangkok, Thailand*. Thesis of Rural Development Study, Graduate School Thammasat University.
- Chulalongkorn University. 2003. *Migrant Workers from Burma and Thailand: Policy Review and Protection Mechanisms*. The results of a seminar "Reviewing Policies and Creating Mechanisms to Protect Migrant Workers" held at Chulalongkorn University on 21 February 2003.
- Castles, Stephen, and Davidson, Alastair, 2000. *Citizenship and Migration: Globalization and the Politics of Belonging*. London: Macmillan.
- Drinkwater, M. & Rusinow, T. 1999. *Care's Livelihoods Approach Natural Resources Advisers' Conference (NRAC)*. Sparsholt, UK: Department for International Development (DFID) Rural Livelihoods Department.
- Isin, Engin F., and Turner, B.S., eds. 2000. *Handbook of Citizenship Studies*. London: Sage Publications.
- IOM Series, 2003. *The Migration-Development Nexus: Evidence and Policy Options*. Geneva.
- Carney, D. (ed). 1998. *Sustainable rural livelihoods: What contribution can we make?* London: DFID.

Marshall, T. H. 1950. *Citizenship and Social Class and Other Essays*. Cambridge: CUP.

McDowell, C., and A. de Haan. 1997. *Migration and Sustainable Livelihoods: A Critical Review of the Literature*. IDS Working Paper 65. Sussex: Institute of Development Studies.

Pitch Pongsawat. 2007. Border Partial Citizenship, Border Towns, and Thai-Myanmar Cross-Border Development: Case Studies of Two Thai Border Towns. University of California at Berkeley, USA

Research Interests:

Phornpimon Trichot. 1999. *Minority Groups and Burma Government*. Bangkok: Thai Research Funds (TRF).

R Bellamy, V Bufacchi and D.Castiglione, eds. 1995. *Citizenship and Identity: Aspects of a Political Theory of Citizenship*. London, Lothian Foundation Press.

Prospects and Dilemmas of Working Together for Sustainable Future: The Case of the DBP-Forest Program in the Philippines

**Lutgarda L. Tolentino, Roselyn F. Paelmo,
Leila D. Landicho, Catherine C. de Luna and Rowena D. Cabahug**

University of the Philippines Los Baños
College, Laguna, Philippines
agro_cfnr@yahoo.com

Abstract

This paper argues that the continued depletion of the natural resources in the Philippines brought about by the human activities (e.g. deforestation, mining, illegal logging) and natural phenomena (e.g. landslides, soil erosion, typhoons, El Nino, climate change) has prompted not only the agriculture, forestry and environment sectors that are mandated to conserve and protect the natural resources, but also the economic sector, particularly the corporates, which are one of the primary consumers of these natural resources, to rehabilitate the degraded environment.

This paper highlights the findings of the participatory assessment of the Development Bank of the Philippines (DBP) –Forest Program being implemented in the 23 project sites in the Philippines that was conducted by the Philippine Agroforestry Education and Research Network (PAFERN) in 2008-2009. The DBP-Forest Program is an environmental advocacy program of a corporate bank which aims to reduce poverty and improve the environmental services through the reforestation of open and denuded upland and coastal areas in the Philippines. This program harnesses the collaboration of local government units (LGUs), people's organizations (POs), non-government organizations (NGOs) and academic institutions.

The DBP-Forest Projects have employed practical and innovative strategies such as promoting synergy and partnership between and among the local organizations; harnessing the active participation of the upland dwellers; encouraging the planting of high value fruit trees which could be a long-term livelihood activity of the farming communities. This paper concludes that partnership and shared responsibilities between the economic sector and the agriculture/forestry/environmental sectors is an important mechanism in promoting sustainable natural resources management. These would lead to improving rural livelihoods of the people/farmers; addressing the needs of the economic sector; and ensuring environmental stability.

Keywords: *participatory, natural resources, sustainable natural resources management, partnership*

Introduction

The Philippine land is categorized according to slope. Lowlands are those with slopes ranging from 0-18 percent while slopes of 19 percent and above are called uplands (Lasco and Visco 2003). The uplands prove to be the life support system of the lowlands and marine areas. It contains the tropical forest ecosystem in the country which is considered as the oldest, productive and protective ecosystem on earth. It also contains untapped mineral deposits. Considering that the uplands are the vital support system of the entire watershed continuum, there is an urgent concern of harnessing its potentials for sustainable development.

The Philippine forest is under the pressure of fragmentation due to inappropriate upland farming cultivation, deforestation and land conversion among others. These issues significantly pose threats not only the country's biodiversity and environment, but to the millions of lives in the upland and lowland areas. While the Philippine government has been implementing forest rehabilitation projects, the issue of forest destruction has become a perennial issue.

Recognizing the need to rehabilitate the degraded environment, corporate institutions like the Development Bank of the Philippines (DBP) has engaged in the conservation and protection of the environment and the acceleration of rural productivity. DBP launched its Forest Program in 2005, which worked on the principle of partnership and collaboration.

The DBP-Forest Program encourages the forestation of open areas in non-privately-owned lands through the planting and cultivating of relatively high-value fruit trees, rehabilitation of coastal areas by planting and cultivating mangroves and sea grass, and the establishment of tree parks. The DBP-Forest Program is being implemented in partnership with the local organizations and communities.

Current State of the DBP-Forest Projects

As of 2009, there were already 23 DBP-Forest Projects throughout the country. These projects are being implemented by the four major partners of DBP. These include the local government units (LGUs), state colleges and universities (SCUs), non-government organizations (NGOs), and the people's organizations (POs). These partners are implementing either or both the upland rehabilitation projects and the mangrove rehabilitation project. As indicated in Table 1, 10 out of the 23 DBP-Forest Projects are being implemented by the LGU, while six are being led by the POs; four are being implemented by the SCUs and three are PO-led.

Table 1. Profile of the 23 DBP-Forest Projects in the Philippines (as of 2009).

Implementing Organizations	Type and location of forest projects	Project area (in hectares)
DBP-Forest Projects implemented by the Local Government Units (LGUs)	Mangrove Rehabilitation Project Brgy. Binulasan, Infanta, Quezon	80
	Mangrove Rehabilitation Project Provincial Government of Guimaras	26
	Upland and Mangrove Rehabilitation Projects Provincial Government of Marinduque	500
	Upland Reforestation Project Provincial Government of Bulacan	13.44 km
	Mangrove Rehabilitation Project LGU-Gamay, Northern Samar	42
	Upland Reforestation Project Provincial Government of Cagayan	172.01
	Mangrove and Upland Reforestation Project Provincial Government of Aurora	498
	Upland Rehabilitation Project Provincial Government of Saranggani	100
	Upland Rehabilitation Project Provincial Government of Nueva Vizcaya	400 hectares
	Upland Rehabilitation Project Provincial Government of Occidental Mindoro	450 hectares
DBP-Forest Projects implemented by the People's Organizations (POs)	Mamamayang Sagip Kalikasan Association (MASAGKA), Inc. Bagac, Bataan	200 hectares
	Kinikilalang Mangingisda ng Mabatang (KIMAMA), Inc.	10 hectares
	Balikatan ng mga Mangingisda Para sa Bakawanan (BAMABA), Inc.	10 hectares
	Multisectoral Watershed Management Council Real, Quezon	130 hectares
	Agroforestry Project Kibalang Balikatan sa Kaunlaran ng Pagkakaisa, Association Upper Kibalang, Marilog District	250 hectares
	Agroforestry Project Upper Kibalang Agroforestry Farmers' Association Lower Kibalang, Marilog District	300 hectares

Implementing Organizations	Type and location of forest projects	Project area (in hectares)
DBP-Forest Projects implemented by the Non-Government Organizatons (NGOs)	Mangrove Rehabilitation Project Carangian Fisherfolks Development Cooperative San Jose, Northern Samar	50 hectares
	Philippine Council for Sustainable Development Palawan	20 hectares
	Bambang Fruit and Vegetable Growers' Multipurpose Cooperative	125 hectares
DBP-Forest Projects implemented by the State Colleges and Universities (SUCs)	Upland Rehabillitation Project Tarlac College of Agriculture Camiling, Tarlac	250 hectares
	Agroforestry Project West Visayas State University Lambunao, Iloilo	500 hectares
	Rubber-based Agroforestry Project Palawan State University Rizal, Palawan	157 hectares
	Upland Rehabilitation Project Cagayan State University Tuguegarao, Cagayan	151 hectares

WORKING ON THE PRINCIPLE OF PARTNERSHIP AND COLLABORATION

A number of community-based natural resources management programs have been implemented in the Philippines. These are either led by the government or non-government organizations. Building from the lessons learned from these people-oriented projects, the DBP embraced the principle of partnership and collaboration in the implementation of the DBP-Forest Program.

There are a number of reasons why partnership serves as a good strategy in any community or rural development activity. Partnership promotes complementation of skills from various organizations; improved the need and problem identification; harnesses the participation of common beneficiaries and stakeholders; promotes access to information and knowledge-sharing; and avoids the duplication and overlapping of functions and service deliveries. Many collaborative projects that were initiated in the Philippines, indeed, proved that greater impact is achieved through proactive partnership and collaboration.

The DBP-Forest Program has employed strategies to facilitate project implementation. Some of these strategies were actually based on the lessons and experiences of the past forest rehabilitation projects that were initiated by the Philippine government and non-government sectors. Based from the experiences in the past, the

DBP has devised mechanisms to ensure the sustainability of the projects and to create significant impacts to the forest partners and their environment.

1. ***The implementation of the DBP-Forest Projects calls for partnership among the stakeholders.*** Among the gauges of a sustainable organization is the degree to which its operations can be continued indefinitely without negatively altering the factors that foster the existence and creation of healthy communities and the natural environment. Osborn et al (2002) stipulated that a partnership is defined as a “working relationship” characterized by mutual participation and joint interests. Partnerships are based on shared vision, values, objectives, risks, benefits, control, and learnings as well as joint contribution of resources (usaid.gov/our_work/.../conf_care_partnershipprinciples.pdf.)

The DBP-Forest Projects encourage the participation of the local development organizations, particularly the LGUs, Department of Environment and Natural Resources (DENR), academic institutions, NGOs, and POs. The Provincial-level LGU-implemented forest projects harness the participation of the concerned local municipalities, NGOs and POs. The State Colleges and University (SCU)-implemented projects also engaged the participation of POs. Harnessing the participation of the different stakeholders facilitate project implementation. The DENR is likewise included in project implementation as most of the project sites are within their jurisdiction.

2. ***Partner-institutions articulate commitments via counterparting.*** Unlike the development programs in the past which are characterized as dole-out, the DBP-Forest Program is not being implemented “*for the people*” but “*with the people*”. The partners, including the local organizations and local communities are encouraged to articulate their commitments and responsibilities in project implementation through counterparting. The institutional counterpart may be in the form of infrastructure support (*from the LGUs*), technical assistance (*from assisting organization like the DENR and/or academic institutions*), and labor/planting materials (*from the local communities*). Counterparting does not only lay down the institutional commitment, but also serves as a strategy that will enable the local communities develop a sense of ownership and accountability over the project. Hence, it elicits their active participation and support to help implement and sustain the project implementation.
3. ***The DBP-Forest Program encourages the practice of agroforestry, with forest trees and high value fruit trees as the major components.*** The upland rehabilitation projects of the DBP Forest Partners are all employing agroforestry, a land use management system that combines the production of agricultural crops with trees and other woody perennials for the twin purpose of ecological balance and socioeconomic productivity of the farmers. Among the high value fruit trees that are cultivated in most of the DBP-Forest Projects are rambutan (*Nephelium lappaceum*), lanzones (*Lansium domesticum*), durian, (*Durio zibethinus*), mangosteen (*Garcinia mangostana*), pummelo (*Citrus grandis*), mango (*Mangifera indica*) and citrus, and forest trees such as mahogany, rubber, etc. These fruit tree

species are planted through intercropping. While the fruit trees are still young, and are being waited to grow and bear fruits, there are forest partners who also plant annual/short term agricultural crops that would serve as their source of food, and income as well. Because the fruit trees are classified as high value crops, the farmer participants are interested to help protect and maintain the plantation as these could provide better economic opportunities in the future. In addition, supportive technologies such as soil and water conservation measures, use of organic fertilizers, and nursery establishment and management.

4. ***Promotes interactive and Participatory Assessment, Monitoring and Evaluation (PAME) of DBP-Forest Projects.*** PAME does not only revolve around monitoring and evaluation. It is a learning experience both to the PAME Team and the community members or project implementers. It provided new learning experiences to the monitoring and evaluating team based on the field experiences of the project implementers. At the same time, the project implementers could also learn from the technical inputs of the PAME Team. PAME is interactive as the conduct of M & E is participated not only by the outside evaluators but also by the forest partners and implementers themselves, including the local partners. It is also a participatory activity as the state of project implementation is articulated by the project implementers and partners themselves. This initiative also promotes partnership development among the sectors involved in M & E.

Prospects in the Implementation of the DBP-Forest Projects

1. ***Support of the stakeholders/actors.*** The strong support of the LGUs, particularly in providing technical assistance and/or logistic support has facilitated project implementation of most of the DBP-Project sites that were evaluated. The active participation of the DENR in project implementation in the form of technical assistance and deployment of technical staff, contributed to timely and smooth project implementation in some of the LGU-implemented forest projects.
2. ***Technical expertise in forest/fruit tree plantation establishment and management.*** The presence of technical staff and experts in plantation establishment and management is also an edge of some DBP-Project Sites. The academe-led DBP-Forest Projects, for instance, have run smoothly because of the technical expertise of the faculty members in fields such as plantation establishment and management, horticulture, forestry, and agroforestry.
3. ***Partner communities' recognition about the ecological value of mangrove and forest plantations*** has motivated themselves to actively participate in the project activities.

Dilemmas in the Implementation of the DBP-Forest Projects

While collaborative project implementation offers a number of opportunities and advantages as discussed in the previous section, working in partnership, however, may also bring out some issues and concerns which may hamper the project implementation. However, partnership and collaboration may also bring about some issues and concerns in project implementation. These include the conflicting interests of the different partners; poor credibility of some partners; poor coordination; lack of commitment from the partners; lack of communication; unequal sharing of efforts; slow decision-making processes; ethical problems; and policy inconsistencies.

Among the dilemmas in the implementation of the DBP-Forest Projects are as follows:

1. ***Insufficient social marketing and IEC about the project.*** There are project sites whose partner communities/POs are not aware of the DBP-Forest Project. It appears that it is only the Forest Partner-institution or the main project implementors that have much knowledge about the project. There are also cases in which the farmer-cooperators were emphasizing that the sharing arrangements had not been discussed with them by the project implementers.
2. ***Bureaucracy delays project implementation.*** Most of the projects that are run by the "more bureaucratic institutions" like the local government units have delays in project implementation because of the delay in the release of funds, selection of partner communities, and even delays in the verification procedures. The delay in project implementation was observed in two of the LGU-implemented forest projects because of the lack or delayed confirmation on the initially identified partner-communities or farmer-beneficiaries. Delay in the payment of the farmers'/communities' labor costs in plantation establishment and management has somehow created some negative impressions from the farmers about the project.
3. ***Lack of social preparations for the farmer-beneficiaries/partner communities.*** Most of the farmer-beneficiaries particularly those implementing the mangrove rehabilitation projects were not so adept on the establishment and management of mangrove plantation. Because of other preoccupations, the farmer-beneficiaries have no time for plantation establishment and management. This is true in the case of the BFVMCI, in which, the cooperative just taps the non-PO members to spearhead the plantation establishment, because the PO members are busy with their other agricultural production activities. Likewise, some of the project's partner communities in Occidental Mindoro admittedly said they have no time to visit and take care of the planted fruit trees because of other livelihood activities that could give their families immediate food and income.
4. ***Competition and conflicts over the resources.*** The project sites could be accessed by non-project participants. Apparently, the non participants pose threats to the plantation establishment and management. There were cases when the seedlings are intentionally damaged by the non-participants. Timber poaching is also apparent in some of the project sites. The fishers and timber poachers from other villages also

contribute to the degradation of some mangrove rehabilitation projects. Based on focus group discussions and key informant interviews, a number of problems have been identified that have constrained smooth project implementation. Stray animals have been identified in all of the DBP-Forest Project sites as a common problem and threat to plantation establishment and management.

Significant Contributions of the DBP-Forest Program's Multisectoral Partnership

1. ***The DBP-Forest Program is geared towards addressing the twin-goal of environmental rehabilitation and socioeconomic productivity.*** The Forest Program does not only address environmental rehabilitation and restoration, but more importantly, it concerns the socioeconomic productivity of the tillers and dwellers of public lands. Ecologically, the farmer-beneficiaries recognized the value of the trees in protecting their environment. Simultaneously, socioeconomic concerns are also being addressed. For instance, during the project implementation, the farmer-cooperators/beneficiaries get additional income when they participate in the collection, hauling and out planting of seedlings. In the long run, these projects could also provide a variety of products that could be harvested, which could also serve as their major source of income. The fruit tree species are considered as high value crops which could provide better economic opportunities to the farmers-beneficiaries. This factor has somehow motivated them to continue on with the plantation establishment and management despite intervening problems in project implementation. Through the DBP-Forest Projects, planting of high value fruit crops which require high investment costs was made possible, and has either opened up new or enhanced existing livelihood opportunities/sources for the partner communities. The high cost used to be a deterrent among the upland farmers to engage in high value fruit crop plantation establishment. With the DBP-Forest Project, they were able to establish their plantation, which may later on provide additional and higher farm income to the farmers, and serve as income-generating projects of the project implementers.
2. ***The multisectoral partnership that was embraced by the different DBP-Forest Projects has addressed some social/community issues.*** The SCU-implemented forest projects paved the way for the informal settlers and the university, to define amicable solution to their conflict of interest. The settlers and the school have become partners in environmental conservation and income generation. It has likewise gave an opportunity and means for the out-of-school youth to re-enter the university through the "work for study program" and scholarship program. Moreover, some members of the indigenous partner communities in Rizal, Palawan was given help by the assigned technical staff on their literacy needs that helped a lot as they continue enhancing their skills in abaca production and processing.

3. ***The partnership has established accountabilities of the institutional forest partners.*** The signing of formal contracts through the Memorandum of Agreement; establishing partnership with organized groups/communities; providing institutional counterparts; and involvement of various local development organizations are among the strategies that helped established the accountabilities of the forest partners on the project.

Conclusion and Recommendation

The DBP Forest Program depicts a model of how a corporate organization can help in the restoration and rehabilitation of the environment and in securing the future of the upland dwellers and upland communities. The provision of resources by DBP to help prime up the activities have paved the way for cooperation and partnership and also in facilitating understanding among the beneficiaries and non-beneficiaries on the importance of re-greening the uplands and coastal areas.

The DENR also plays an important role in the project. Considering that the main domain of the DBP-Forest program are the public lands, its role is critical particularly in the choice of sites and in making sure that the sites are available and suitable for the goals and intentions of the project. DENR's roles in providing technical assistance to the proponents within their jurisdiction also contributed to the success of the projects.

LGU participation is sometimes enhancing the project activity implementation except only when bureaucracy becomes very evident. Political interest should be geared strictly towards the achievement of the project goals.

School-led projects serve as a model of win-win approach to conflict resolutions, accelerated forest rehabilitation, and provision of educational opportunities to students. Moreover, the technical expertise inherent among SCU proves to be beneficial in the DBP-FOREST project implementation vis-à-vis species-site matching, plantation establishment and management, seedling care.

References

- Florece, L. M. 2009. Climate change implications for fire regime and rehabilitation of fire-prone ecosystems in the Philippines. *Ecosystems & Development J.* Vol. 2, no. 1, pp 3-12
- Lasco, R. D. and R. G. Visco. 2003. Introduction to Agroforestry. Lecture Syllabus. College, Laguna, Philippines. Philippine Agroforestry Education Network and the UPLB Institute of Agroforestry.
- Osborn D (2001) *Showcasing Environmental Management Accounting in Local Government: contexts, methods, and summary results.*
<://http://www.emaweb site.org/documents/emaric_166.pdf>. Accessed 09 July 2010.

Social Capital in Facilitating Community Welfare Development: The Case of Kandang Kolektif in Lombok Islands, Indonesia

Rosiady Sayuti, Akhmad Zaini, and Moh. Taquiuddin

Agriculture Faculty
Mataram University, Indonesia

Abstract

Kandang kolektif was established by the farmers in Lombok Islands in Indonesia in response to the continuing and increasing crime rates brought about the frequent cattle rustling and weakening security functions of the police and customs institutions. The main objective of kandang kolektif is to protect the cattle from the thieves, and at the same time ensure household economic activity. Kandang kolektif has become a collective social asset which also effectively addresses the problems on cattle productivity and reproduction.

This paper presents some forms of social capital that are embedded in a kandang kolektif structure, namely: awig-awig (local law), kadasan pattern, gotong royong, solidarity and networking with outsiders. The farmers utilized one or more forms of social capital to address or achieve a particular interest related to cattle raising and security.

Keywords: kandang kolektif, cattle rustling, social capital

Introduction

Spread of various forms of social vulnerability is believed to have links with poverty conditions. In Lombok Islands in Indonesia, cattle rustling has been a rampant problem brought about by economic crises which started in 1997. In the midst of economic powerlessness, people tend to engage in various activities to overcome their economic problems. Such actions were of course very disturbing to the society as a whole. Despite the efforts of the concerned government institutions, this problem has yet to be solved. In fact, the community is considered less responsive to the law enforcement officials to solve theft cases through formal channels (*Kompas Daily*, 12/3/2001).

For most rural people of Lombok, their farming activities could hardly be separated from livestock (mainly cattle) although the basic household needs are obtained from the food crops (Mashur *et al*, 2001). Besides being used for farm labor, particularly in land preparation and management, cattle are also considered as a household asset. With a relatively high economic value, cattle are usually kept as a form of cash savings which can be sold any time, if necessary. This is also the reason why cattle are the main target of the rustlers.

The high incidence of livestock/cattle rustling also poses threats to the security of the rural people. Such concerns were felt not only in the level of individuals (families), but members of the society as a whole. Because law enforcement officers were unable to solve the problem of cattle rustling because of certain constraints, the individual breeders have developed mechanisms to protect their cattle from the thieves. Cattle sheds were built side by side and even merged with the main house. There are also instances when the head of the family would sleep near the shed of the cattle.

Meanwhile, the thieves in Lombok have become a social and organized group, composed of about 30 people, who also employ strategies to achieve their purpose of cattle rustling. Hasniati and Abdullah (2005) reported that the group has a clear division of tasks among them. The group is divided into two subgroups—the carrier of the cattle that were stolen, and the cattle rustlers.

The limited ability of the individual households to guard their cattle, and the weak performance of the formal security forces to deal with the group of cattle rustlers gave way for the establishment of *Kandang kolektif*. The emergence of *kandang kolektif* was actually based on the motivation of farmers to protect, maintain and house the cattle together in one convenient location.

The *kandang kolektif* in Lombok Island has been in existence before the 1980s and has been going on from generation to generation (Mashur and Muzani, 2004). There are nearly 800 *kandang kolektif* in Lombok, with emphasis on joint efforts to guard cattle from theft (Dahlanuddin *et al.*, 2005). Other studies (Sasongko *et al.*, 2005; Mashur and Muzani, 2004) have seen that through the *kandang kolektif*, the farmers have gained a sense of security in running their business. Many benefits were gained primarily in supporting the integration of livestock with rice farming.

The main problem faced by farmers in Lombok Island for maintaining or expanding their farming is cattle rustling. This criminal action is detrimental to the security of the farmers and households. The farmers used to build a barn in the doorway or down under the house to help protect their cattle from the rustlers. Cattle ranching systems of this kind turned out to cause environmental pollution and social problems. Therefore, farmers had to make *kandang kolektif* systems by making the cage in groups on a wide area outside the residential population (Sembiring *et al.*, 2002).

Physically, *kandang kolektif* is a building consisting of a number of single cages with one to two heads of cattle owned by different farmers. There are usually two guard posts which are used by the farmers in patrolling (Mashur and Muzani, 2004). In an effort to facilitate collective activities among fellow farmers, *kandang kolektif* is generally formed by farmers who live in a neighborhood (*dusun*) with about 15-30 persons (Fachry *et al.*, 2007). Thus, *kandang kolektif* has served as a social bonding, and *dusun* is considered as a critical element that led to the cooperation among the farmers.

Sasak tribes were the original inhabitants and the major ethnic group (80%) in Lombok Island. Most of them embraced Islam. In addition to Sasak tribe, Lombok Island is also inhabited by people of Bali, Java, Samawa, Mbojo, Tionghoa, Timor, Bugis, Arabian and others (http://id.wikipedia.org/wiki/Pulau_Lombok). Among ethnic immigrants, those from Bali are the largest ethnic group which includes about 3 percent of the total population of the island of Lombok.

According to the documents 'Lombok Style' (Bappeda Central Lombok, 2004), Sasak people practice some traditions in various aspects of life that reflects the spirit of togetherness, among others. The traditional production system makes use of various economic concepts. The concept of developing of sasakese economic conditions is '*bukti*' (evidence)/*paice-adil* (to cultivate mutual trust and achieve commensurate requirement). There is also the value of adequacy '*tomot*' which means fulfilling all the needs. Meanwhile, the economic mechanism to spread the spirit of togetherness and kinship through institutions are called *běděyě -singga'-utang-simbat-tempil-kadu-bagi*-etc. The household economic activities are reflected in land ownership (paddy field). Meanwhile, the traditional production system known as *Nyakap*, was built through the spirit of "*běgawěan pětě sangu ai*" (working for a living stock). Values that underlie the search for *Sangu ai* (supplies) are associated with the future life of the *sambung irup* (a chain of life without end). Results obtained by *apik-apik* (efficient) provide for the long term needs. The traditional systems of social behavior can be identified in the form of *bejango* (mutual paying attention especially to the neighbors/family/persons who are sick, intersection advance, missed out etc); *belangar* (having the same meaning as *bejango* but intended for people affected by disaster deaths).

A number of theorists (Coleman, 1988; Putnam, 1993; Coleman, 1994; Woolcock, 1998; Fukuyama, 2001) put social capital as one key element in economic development and civil society. Although it does not provide an explanation clearly and firmly, Coleman (1988, p. 98) defines social capital based on its function: "*social capital is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structures and they facilitate certain actions of actors—whether persons or corporate actors—within the structure*".

Furthermore, Coleman (1994, p.373) explains that social capital functions are related to those aspects of social structure to actors as resources that can be utilized to realize the importance. Referring to the definition of Coleman (1988), Lawang (2005, p. 211) explained that the concept of social capital by Coleman (1988) is rooted in a number of grand theories in sociology, namely: structural functionalism (structure, function and social systems) and social exchange paradigm and symbolic interactionism (the concept of an actor). The emergence of the theory of rational choice is independently developed by Coleman.

Social capital is embedded in social structure. Social structures are distinguished in terms of formation (the process) and scope (micro, meso, macro). From the process of formation, social structures are composed of: *first*, social structure granted from the previous generation, and are often inherited in a way similar to the next generation

through socialization. This social structure is objective. *Second*, the social structures that are emerging from social interaction between subjects, either because of shared meanings as well as social rewards or awards obtained by the economy is called intra-subjective.

Based on a number of definitions and concepts of social capital, this study used the rational choice as the theoretical framework. Referring to the view of Coleman (1988: 5) who explained that *'If we begin with a theory of rational action, in which each actor has control over certain resources and interest in certain resources and event, then social capital constitutes a particular kind of resources available to an actor'*. Using rational choice theory, this study defines social capital as *'social forces which are constructed by the community of individual farmers and/or groups tied to a social structure in the management of farm resources can be assessed as effective and efficient tool for achieving individual goals and/or group through a capital-capital sinerjicity with each other'*.

Synergy principle says that physical capital or human capital, and social capital alone is not sufficient by itself. Energy contained in each capital necessary to put together a more effective force (Lawang, 2005: 84). That is, an activity will be successful if all the capital (human, physical and social) available in the community are utilized optimally. Therefore, Scoones (1998) also explained the concept of *sinerjicity* as community efforts to create livelihoods (livelihood) by combining a variety of different capital where they have access to and control over them. It consists of a combination of natural resources capital, economic or financial capital, human capital, and social capital.

The concept of welfare is quite diverse and has different meanings in each country (Suharto, 2006). Midgley and Tang (2001: 244) link between the well-being with social policy and development of social welfare. Social policy is an effort to fulfill social needs and human well-being. Prosperous condition occurs when human life safer and happier because their basic needs for nutrition, health, education, shelter, and income can be fulfilled; and when humans get protection from the major risks that threaten their life. Therefore, social development is meaningful considering the collective efforts of the government, communities and individuals in promoting community welfare.

Welfare is not an economic phenomenon, but a socio-cultural phenomenon, where the values of social interaction was going on more decisively in achieving prosperity. Therefore, the concept of welfare is broader than just the definition of prosperity or happiness. It does not only refer to the physical needs of people, families or communities as entities, but also their psychological needs. Three groups of needs that must be fulfilled are the basic needs (food-clothing-house), social need and development needs (Soembodo, 2006). Referring to this view, the definition of welfare is inseparable from the concept of poverty as a key indicator in measuring the level of welfare of individuals, families or communities. Participatory Poverty Analysis on the farmers in the forest area at Central Lombok done by Taqiuddin and Hasniati (2007) reported that a farmer household is classified as 'poor' if it does not have cattle and raising livestock are usually owned by someone else with *kadasan system*. A household

is classified as relatively 'wealthy' when the cattle are more than five heads. A household is categorized as simple if it owns about 1-4 cows.

The role of social capital gives implications to efforts of increasing community welfare. In the case of Lombok for example, Zaini (2004) shows that social capital in the form of farmer involvement in the organization has a significant impact on increasing revenues to the household. Therefore, rural development programs should be integrated with the organizations and local institutions, particularly those initiated by the community with voluntary membership. With the involvement of these institutions, there would be an assurance of the sustainability of the project. It can also reduce the cost compared to forming a new institution with a common purpose.

The basic aim of this research is to analyze the dynamics of social capital in farmers' community in cattle management based on *kandang kolektif* in Lombok Island. Specifically, this paper explores the history and process of the emergence of *kandang kolektif* in cattle management associated with social and economic problems in the structure of farmer society in the Lombok Islands; and explains the forms of social capital that are embedded in the *kandang kolektif*'s functional mechanism.

Methodology

The study was conducted in the three modes of *kandang kolektif*. The first site is located in the research university (Faculty of Animal Husbandry University of Mataram) together with the other party (Agriculture Technology Research Board, West Nusa Tenggara) through ACIAR-assisted projects in Gerunung-Central Lombok (technical irrigation rice field area). The second site is a *kandang kolektif* with intensive guidance from the Government through funding from donor agencies (JICA) in Wanasaba Village-East Lombok District (dry land). The third site is the *kandang kolektif* located in Lebah Sempage Village-West Lombok (village forest) with no social intervention from any external organization.

The data were collected using in-depth interviews, focus group discussion, and observation. Selection of research informants was done purposively based on certain criteria, namely: individuals (farmers) that are considered most knowledgeable about the information (the management group); community leaders/village heads who conduct social probing among the farmers; intensive individual who has been embodied in a relatively long time with an activity or community activity at the location of research (ACIAR project field workers); individuals or institutions that are still involved intensively together with the activity or activities of the research objectives (Livestock Officer Staff); and the individual who has enough time or opportunity for the requested information (members of *kandang kolektif*).

Results and Discussion

Process of the establishment of the kandang kolektif

Table 1 shows the basic information about the physical, human and social capital of the three types of *kandang kolektif* in Lombok islands. The social capital, which has been existing in the three communities are basically rooted in the social structure of Sasakenese, although these have different terminology and language. In addition, there are some differences about the characteristics of social capital in their respective locations.

Table 1. Establishment of kandang kolektif using the physical, human and social capitals in the three study sites in Lombok Islands, Indonesia.

ASPECT	WEST LOMBOK	CENTRAL LOMBOK	EAST LOMBOK
Location	Pesorongan Jukung, Lebah Sempage Village, Sub-district Narmada	Sukadana, Gerantung Village-Sub District Praya	Tanak Mira, Wanasaba Village, Sub-district Wanasaba
Physical Capital	- The land for the stable area : 10 acre; the property of group; - Simple <i>kandang kolektif</i> (ground floor; fences and woody bamboo; roof thatch); - There is one guardhouse for the night patrolling activities	- The land for the stable area : 6 acre; groups per year rent; - Simple <i>kandang kolektif</i> (ground floor; fences and woody bamboo; roof thatch); - There is one guardhouse for the night patrolling activities	- The land for the stable area : 30 acre; the property of group; - Simple <i>kandang kolektif</i> (round floor; fences and woody bamboo; roof : plaited coconut leaves); - There is one guardhouse for the night patrolling activities
Human Capital	Ability, motivation and cattle experiences of farmers	Ability, motivation and cattle experiences of farmers	Ability, motivation and cattle experiences of farmers
Social Capital	- Mutual cooperation among the farmers which who anchored in the Sasak ethnic social structure (the culture of <i>patuh</i>); - morale and commitment are embedded in the local socio-economic structure (<i>kadasan system</i>); - Trust to the social structure of local politics (Village Government or Village Head);	- Mutual cooperation among the farmers which who anchored in the Sasak ethnic social structure (the culture of <i>trasne</i>); - morale and commitment are embedded in the local socio-economic structure (<i>tuhu</i>); - Trust to government project that embedded in socio-politic structure;	- Mutual cooperation among the farmers which who anchored in the local social structure (the culture of <i>tulung danang</i>); - morale and commitment are embedded in religious values; - Trust and compliance to local socio-politic structure (Village Head, <i>dusun</i> etc);

Sources: Primary Data (2009)

Below are the three different forms of social capital in the three types of *kandang kolektif*:

Gotong Royong

Gotong royong is embedded in the Sasak culture. It pertains to the values of togetherness or *beriuik* = *rēmē* = *patuh* = *trasnē*, and are integrated in the *semeton* (family) concepts. The spirit is even a reference for all components of the local development actors. *Gotong royong* in terms of '*patuh*' is also contained in the motto of West Lombok Regency 'PATUT-PATUH-PATJU' and 'PATUH KARYA' in East Lombok. The word '*patuh*' has the same meaning as '*Tulung Danang*', which refers to the name of a group in Tanak Mira (East Lombok). Meanwhile, the values of *kegotong royongan* in the social structure of Central Lombok are expressed in terms of '*trasne*' as a motto: TATAS-TUHU-TRASNE.

Results of the focus group discussions in the three study sites confirm that *Gotong royong* is generally related to consultation and collective action. The farmers' series of meetings results to the decision of establishing a *kandang kolektif*. During the consultation, they came up with a decision about the division of tasks (e.g. who does what), certainty of time and schedules, number of cages, etc. The consultation-meeting is usually led by the respected and trusted village resident such as the head of the village. Collective action is manifested through the actual establishment of the *kandang kolektif*. The members show full commitment and participation, particularly in undertaking the activities that were decided upon by the group.

Morale and Commitment

The high morale and commitment of the community members reflect the philosophy of work from the Sasakenese tradition, *ginē-gunē-game*. *Ginē* means that everything could be done based on the level of knowledge and expertise. It reflects the diligence and sincerity in carrying out the activity to come up with good outputs. *Gunē* means that something has been done, but is not useful either to an individual or to the community. Finally, *game* means 'may' (appropriate) or 'may not' (not appropriate). These philosophies serve as their guiding principles in their everyday life. On the establishment of *kandang kolektif*, the morale and commitment of the members are embedded in the structure of the three study sites, namely: social structure of local economy in West Lombok; social structure based on the principle of "*tuhu*" in Central Lombok; and, values and religion in East Lombok.

Trust

Trust is the other form of social capital that has been identified in the establishment of *kandang kolektif* in three study sites. An individual and/or the community members believed in the local institutions or government that the establishment of *kandang kolektif* would be beneficial to the achievement of collective security. Farmers have also the expectation that these institutions act accordingly to fulfill the community's to raise cattle through the aid from the government. The farmers in Pesorongan Jukung believed

that *Keliang* or other community leaders about inform about their *kandang kolektif* at least to the policy makers at the village level. Village officials should disseminate this information through annual progress reports to the government bodies so that concerned agencies would recognize their efforts.

Based on the explanation above, the facilitation of social capital during the process of *kandang kolektif* establishment in the study sites are as follows: First, the cattle raisers are convened to discuss and arrive at a consensus of protecting their cattle from the rustlers. Second, the individual farmers becomes part or member of the “farmers’ group or community”. The formation of this group would encourage the individual farmers to contribute their time, efforts and monetary counterpart for the common interest of protecting their cattle. Finally, the *kandang kolektif* is established utilizing their natural resources into physical capital goods. The *kandang kolektif* is also seen as a mechanism for the development of rural cattle farming.

Dynamics in the establishment and maintenance of kandang kolektif

The current conditions today resulted to the shift/change of objectives that were previously set in the *kandang kolektif* during the inception phase. Inventory of social capital was embedded in the Sasakenese social structure (gotong royong, morale, commitment and trust). These social capitals have developed as a social force in addressing the problems, and achieving the desired goals. There are differences in the conditions of *kandang kolektif* in Central Lombok and East Lombok compared with the West Lombok (Table 2). In his research, Bebbington (1997) highlighted that the differences are possible because of social interventions from external organizations (e.g. government and universities) that maximize the functions and roles of social capital.

The brief description of the objective conditions of capital (physical, human and social) in each *kandang kolektif* based on farmer groups as shown in Table 2 are as follows:

Table 2. Inventory of the physical, human and social capitals in the three study sites in Lombok Islands, Indonesia.

ASPECT	WEST LOMBOK	CENTRAL LOMBOK	EAST LOMBOK
Location	Pesorongan Jukung, Lebah Sempage Village, Sub-district Narmada	Sukadana, Gerantung Village-Sub District Praya	Tanak Mira, Wanasaba Village, Sub-district Wanasaba
Name of Group	Unnamed, only known by the name ' <i>Kelompok Tengah</i> ' (Middle Group)	' <i>Rezeki Nomplok</i> ' Groups	' <i>Tulung Danang</i> ' Groups
PHYSICAL CAPITAL			
Stable	Ground floor, roof varies: asbestos and woven bamboo	Floor: ground and PC; Roof: mostly weeds	Permanent (PC and floor tiles)
Feed	Abundant	Depend on the season	Depend on the season
Water	Abundant	Relatively abundant	Close to the rivers and springs, but the necessary pipeline to the location
Waste Utilization	Nothing	Nothing	Rarely, still a few farmers
Infrastructure	Distance 100 m from village road (forest area); rocky conditions.	Distance 50 m from province road (asphalt)	Relatively far from State Road (1.5 Km)
HUMAN CAPITAL			
Experience	Average over 20 years	Average over 25 years	Average over 30 years
Motivation	As additional work, in which the wetland and HKm (community forest) as a principal occupation.	As additional work, agricultural fields and gardens as its main business (farm workers and owners)	Main occupation, while the agricultural fields and dry lands (field) as support;
Age	Average 36 years	Average 40 years	Average 40 years
SOCIAL CAPITAL			
Group Structure	No structure, having only a coordinator	Having a complete structure (Chairman, Secretary, Treasurer and sections)	Having a complete structure (Chairman, Secretary, Treasurer and sections)
Division of work	Nothing	There is a clear division of tasks between among the board	There is a clear division of tasks between among the board
Rule	There is <i>awig-awig</i> (unwritten)	There is <i>awig-awig</i> (written)	There is <i>awig-awig</i> (written)
Bridging	Nothing	Members of GAPOKTAN (Farmers Group Union)	Sharing information with the other farmers outside the residence
Linkage	Nothing	ACIAR Project (Mataram University-BPTP-Livestock Service Office West Nusa Tenggara)	JICA Project, cooperation with Livestock Service West Nusa Tenggara
Activity	Night patrol and mutual cooperation for stable cleaning.	Night patrol, mutual cooperation, group meeting routinely, training, extension etc	Night patrol, mutual cooperation, group meeting routinely, training, extension etc

Sources: Primary Data (2009)

Pesorongan Jukung – West Lombok

Lebah Sempage, a village with special characteristics, is located in the area of protected forests in Sesaot-West Lombok, along with three other villages (*Batu Mekar*, *Sesaot*, *Sedau*). The protected forest covers an area of 5950.18 hectares, which includes two sub-districts: Narmada and Lingsar. The *Lebah Sempage* communities rely on agricultural land by working as farm laborers in rice fields and gardens. Meanwhile, small portion of them have land ranging from 0.1-0.3 hectares. In West Nusa Tenggara, the areas around forest are 'remote areas' and viewed as 'pockets of poverty'. Communities living in such areas usually have no access to the centers of economic and public service facilities (roads, health, education and so on).

There are three units of *kandang kolektif* in Pesorongan Jukung. There is no clear identity of each cage in the two other study sites. Typically, naming of the rural farmers groups in Lombok describes the spirit, purpose or social condition that develops when the group was first initiated. Farmers in Pesorongan Jukung have their own way in distinguishing the three groups/*kandang kolektif*. One is the '*tengak*' group (*tengak* means 'middle', because the cage is located in the middle, between two other cages). This *kandang kolektif* has 40 heads of cattle.

Since it was founded around 1987 until today, '*kandang tengak*' had not shown significant progress. The difficulty in access roads (to and from the location) to the central government (District and Regency) had implications on the lack of information and the frequency of visits of the field extension staff. These limitations have already been accepted by the farmers. *Lebah Sempage* position as a village 'around the forests' became an obstacle for establishing relationships and networking with the outsiders. There are no outstanding farmer's activities, except night patrols and *gotong royong*. There is no cooperation among *kandang kolektif* except in one village. All of the *kandang kolektif* in Pesorongan Jukung only focus on activities of each group.

Gerantung – Middle Lombok

Gerantung, a village in Central Praya District of Central Lombok Regency, has an area of 351.38 hectares. Gerantung is relatively accessible to the Central District or Regency District. Its topography is slightly hilly. There is a stretch of agricultural land with sufficient irrigation facilities. The main agricultural products are rice and pulses. With this condition, a cattle farming is very suitable for crop-livestock integrated system. The number of cattle in Gerantung is 116 heads which is managed by 113 families through *kandang kolektif* (seven pieces). One of them, *kandang kolektif* '*Rezeki Nomplok*' existed in Sukadana Hamlet.

Kandang Kolektif '*Rezeki Nomplok*' had originally 10 members when it was formed in 2003. The name '*Rezeki Nomplok*' originated from the existing 10 heads of cattle from BAPPEDA-Middle Lombok, which was considered by the members as "good fortune". After establishing the '*Rezeki Nomplok*', they were able to receive grant/aid from the government. Farming is the livelihood activities of the 40 families in the research site, and cattle raising is their secondary source of income.

The average age of the group members is 40, and most of them have been farming for more than 25 years already. This means that they have started farming at the age of 15 (equivalent to the age of a junior secondary education student). Apparently, cattle raising has been passed through generations. The respondents in the study site have learned the skills in cattle raising from their parents. In 2005, the *Kandang Kolektif 'Rezeki Nomplok'* joined the contest at the Central Lombok Regency, despite the fact their *kandang kolektif* physical conditions was not as good as the others. However, they won the 3rd place because of their group dynamics, particularly the *gotong royong* and cooperation.

When ACIAR (*Australian Centre for International Agricultural Research*) put up a project in Central Lombok, *Kandang Kolektif 'rezeki nomplok'* was chosen as one of the target groups, based on the criteria set by the management program. These include the number of cows, cooperation and security.

Wanasaba – East Lombok

Tanak Mira, a hamlet which lies at Wanasaba Village has a population of over 2000 people and 500 households. Most of the people relies on subsistence agriculture (*field rice*) combined with the cattle farming activities. This hamlet is quite far from the center of the village. It is located on the outskirts of the village forest area. Cattle farming (*ngeseng*) is the main occupation of most people in Mira Tanak. This study site has six (6) *kandang kolektif* with 382 heads of cattle. *Kandang kolektif "Tulong Dunang"*, the group which manages the *kandang kolektif* is the most well-known group.

Suhubdy *et al* (2008), mentioned that this group founded in 1995. In 1970, this group was established as '*Tanak Mire*' with initial capital of 33 heads of cattle. Later on, the group's name was changed to Farming Group NTASP taken from the name of 'Project NTASP' (*Nusa Tenggara Agriculture Support Project*) in 1986.

The members of farmer groups '*Tulong Danang*' had an average age of 40 years old with 30 years experience in cattle farming. Most farmers have acquired cattle from government aids through *kadasan* patterns. Cattle farming use intensive pattern, in which cows are kept in cages which were built in the same area. Cattle feeding is done by cut-and-carry (i.e the feed is searched by each owner). Suhubdy *et al* (2008) also saw that the intensification of this group is based on artificial insemination (AI) technique. Thus, farmers in Tanak Mira are quite knowledgeable about the nature of animal reproduction/breeding.

Limitations of feed and clean water in dry season are still among the constraints in cattle farming. Farmers are aware about various feeding technology has actually known by the farmers. However, they have not been practiced because of a number of constraints (technical and non-technical). Besides, they have not utilized waste as fertilizer and organic manure.

Since 1986, the group 'Tulung Danang' has always been successful in implementing government programs in cattle farming. The main factor is the collective cooperation coupled with the motivation that cattle farming is their main source of livelihood. In 2008, this group was re-elected by the West Nusa Tenggara Livestock Agency Office as pilot site for "*Development of Beef Cattle Through the Use of Local Resources in Eastern Indonesia*" project which is supported by JICA.

Facilitation Functions of Social Capital

The facilitation function of social capital includes the safety of cattle, environmental hygiene, social solidarity, improving cattle productivity and increase of household income.

Cattle Safety

At the time of the study, cattle rustling has already been observed in the three study sites. The farmers safeguard and protect their cattle. This led to the establishment of *kandang kolektif*. However, the existence of *kandang kolektif* did not stop the cattle rustling in the study sites. For effective protection of the cattle, the members of the *kandang kolektif* religiously observe their agreed-upon rules known as *awig-awig*. As explained earlier, among the agreements in the *awig-awig* is to conduct group patrolling.

Environmental Hygiene

In addition to security problems, the cattle impounded in each of the household backyard poses negative impact to the environment, because of the cow manure. Even in Pesorongan Jukung, the barns that are built in the middle of the hamlet could trigger protests from the community. For environmental hygiene purposes, the stables are located near the garden or field of the *kandang kolektif*. Establishment of *kandang kolektif* also keeps the villagers from a number of diseases that could have been caused by the poor hygiene within the neighborhood. In Tanak Mira, diarrhea and vomiting are oftentimes being experiences by its inhabitants, especially during the rainy season when environmental health is not guaranteed. In addition to cleaning up cattle, mutual cooperation is conducted periodically (every day or every week) to fix the fences that could be damaged by the cattle. Regular cleaning of the cattle means maintaining security of farmers and cattle from any form of diseases.

Social Solidarity

Social solidarity in a *kandang kolektif* was seen in the attitudes that emerged in the social interaction between farmers such as: mutual understanding and attention (Jurit); cooperation and helping behavior (Pesorongan Jukung); and provision of advice and reminders with each other (Tanak Mira). In West Lombok, the farmers practice *besiru* in which the farmers voluntarily help each other from planting until harvesting. *Besiru* pattern is also applied in *kandang kolektif* particularly in the repair of fences and construction of individual cages.

Night patrolling activities are done in groups or rotation. This activity is a tangible form of social solidarity that was observed in the three study sites. If there are farmers who were constrained to go on night patrols, other farmers would volunteer as their replacement. When the farmer is in charge of patrols, he takes all the responsibility in protecting the cattle from the rustlers. In the Tanak Mira, social solidarity is observed even during the dry season when animal feed is usually limited. With this, the farmers would group together to look for feeds and grass.

Improving Cattle Productivity

Cattle productivity is measured by farmers through the physical appearance and health conditions of the cattle (e.g. strong in feed intake, cattle has never been sick, healthy cattle). If there is a skinny cattle in the *kandang kolektif*, the farmers would keep on feeding the cattle diligently.

As one of ACIAR assistance programs, farmers of 'Rezeki Nomplok' (Jurit-Gerantung) is still in the process of developing a network or relations with other parties. ACIAR and other agencies provide information and assistance to these farmers to improve the productivity of cattle in Gerantung. In Tanak Mira, the network built by the government (Livestock Service Office) since the 1980s has contributed to the efforts of increasing cattle productivity. The presence of government officers in the field has an important role in introducing the 'group' to the parties on policy makers at the top level (District and Provincial). Good relations with Field Officers (PPL) allow farmers to perform artificial insemination (AI). In fact, currently, there is a 'farmer's cadre', a network service provider in the field of AI.

Income generation for the household

The limited financial capacity of the farmers has become the main obstacle in the provision of domestic cattle. Therefore, the application of 'system kadasan' between owners and farmers (keeper) is a scheme to overcome obstacles such as limited capital. *System kadasan* is actually a pattern of rural economies that are not based on economic interests alone but is determined also by the social capital of the farming community.

Trust between the 'owners' with 'pengadas' (keeper) is the basis for the continuation of System Kadasan's practices. The 'owner' usually trusts the 'keeper' because of his ability and the hope that 'keeper' will be responsible for raising the cattle. Consequently, 'the pengadas' (keeper) assumes the responsibilities as per the conditions, interests and capabilities entrusted to him by the owners. Trust comes from an understanding and knowledge that is formed from the experience of social interaction among farmers.

Discussion

Analysis of the existence of *kandang kolektif* in Lombok is still relevant in the context of the scheme-purpose tools as cited by Weber. That is, the *kandang kolektif* has become an effective and efficient mechanism of achieving the goal of security. However, *kandang kolektif* is not the only collective security mechanism that is available in the society structure as earlier discussed. There are two other security patterns that exist. These include the formal security pattern and the Sasak security patterns. Therefore, the decision of farmers (individuals and groups) to select the pattern of *kandang kolektif* depends on their ability to respond to the conditions and situation of a number of alternative options available. Parsons saw the ability of actors (farmers) in voluntary approaches.

The weak performance of the police and the weakening of customary institutions are clearly a serious obstacle in overcoming the rampant cattle rustling. Security pattern through the establishment of stable which blend with home owners is also not the best choice due to the modus operandi of the rustlers. A farmer faced with 10-30 thieves would be at a disadvantage.

Social reactions through *kandang kolektif* pattern did not arise spontaneously. It is not even a direct response of the community when cattle rustling started to emerge. Each farmer has the same notion about the situation and conditions brought about by the cattle rustlers. This factor encouraged them to perform a series of collective actions such as *kandang kolektif*. In addition, the establishment of *kandang kolektif* reinforced and accelerated support from the local government. Livestock Office and other farm aids. Thus, *kandang kolektif* also emerged and developed as a process of interaction among individual farmers. Blumer (1962) relates 'symbolic interactionism' as described Ritzer (2007: 52), as a specific nature of human interaction that is the process of translating with each other and mutually defining each action.

In the analysis of rational choice theory, farmers have roles in determining whether an aspect of social structures could be a social capital. The farmers viewed *kandang kolektif* as a form of social capital that is valuable in facilitating the achievement of a particular purpose. Night patrol activity by rotation is a form of social capital for the cattle security, and not for aesthetic purposes. Finally, social capital that is embedded in the *kandang kolektif* also plays a role in improving the economic conditions of their farming communities. Referring to the framework of the rational choice theory, the objective of prosperity is achieved when a number of interests have been fulfilled such as security, environmental hygiene, social solidarity, improving cattle productivity and generation of household income. These are actually the basic needs of the farming community. The meaning of welfare in the context of this study is in terms of the economic value based on cash money. They argued that cattle raising encouraged them to become rich and prosperous. By maintaining a cow, they are able to send their children to become 'graduate cow' as the term in the Tanak Mira (East Lombok). They also believed that if you want to step on the holy land mecca, they have to raise cattle. Similarly, they could also fulfill other needs such as buying rice fields, building houses

or even increasing its capital to buy more cattle. If farmers were able to satisfy their needs, it means that they have already improved their well-being.

Related to the sinerjicity principles, the pattern of capital sinerjisitas that need to be developed within the framework of fulfillment of basic needs of actors towards achieving common goals (welfare) are:

- *Formulation*: human capital, social capital-physical capital and-the economic capital: human capital (experience, knowledge, skills, motivation) with the facilitation of social capital (social solidarity, mutual assistance, networks, trust, etc.) will produce physical capital (e.g. physical of *kandang kolektif*) that deliberately addresses specific purposes in the production process to allow the actor to produce economic capital (financial/ benefits);
- *Direction*. This includes sinerjicity horizontally and vertically. “Horizontal Sinerjicity” can occur between the capital in a particular social structure and social structure among the same level (e.g. between *kandang kolektif*). Meanwhile, vertical sinerjicity places through an interactive relationship between a social structure with social structure that is higher (eg communities with government, private and university);
- *Locus*: sinerjicity could occur in micro structure (*bonding*), mezzo (*bridging*) and macro (*linking*).

Conclusion

The *Kandang kolektif* was established by farming villages in response to the rampant problem on cattle rustling. The social capital, which is embedded in the sasakenese macro structure, has facilitated the other forms of capital in achieving the “physical form of *kandang kolektif*” such as the mutual work or collaboration, commitment and trust. The social capital which was observed to have been embedded in *kandang kolektif* includes *awig-awig*, *kadasan* patterns, mutual assistance, solidarity attitudes and networks with outside parties.

To achieve a desired specific interest related to cattle management, farmers take advantage of one or more of such forms of social capital. Security functions of livestock are guaranteed by the *awig-awig*. Among the functions of *kandang kolektif* are: environmental hygiene (mutual assistance); social solidarity (solidarity attitudes: mutual understanding and attention; helping behavior); cattle productivity and improvement (collaboration with external institutions) and the increased household income (*kadasan* pattern).

References

- Bappeda Lombok Tengah, 2004. Lombok Style. GTz Urban Quality Kabupaten Lombok Tengah.
- Coleman, J.S. 1988. Social Capital in the Creation of Human Capital. *The American Journal of Sociology*, Vol. 94. Supplement: Organizations and Institutions Sociological and Economic Approaches to the Analysis of Social Structures (1988). Pp. S95-S120.
- Coleman, J.S. 1994. Dasar-Dasar Teori Sosial : Referensi bagi Reformasi, Restorasi dan Revolusi (*Terjemahan*). Penerbit Nusa Media, Bandung.
- Creswell, J.W. 2003. *Research Design : Qualitative, Quantitative and Mixed Methods Approaches*. The 2nd Edition. SAGE Publications.
- Dahlanuddin, Hermansyah Pany, Happy Poerwoto, A. Muzani, Totok Yulianto, Lia Hadiawati, Syafi'i, Indiana, M. Muhzi, Mansur Ma'shum, Mashur dan Abdul Mutthalib (2005). Inventory of human resources and infrastructure for Bali cattle development in Lombok. Survey Report, Australian Center for International Agricultural Research. Canberra.
- Fachry, A., *et al.*, 2007. Survey Dasar Produksi Sapi Potong dan Kinerja Kelompok Peternak di Nusa Tenggara Barat. *Laporan Penelitian*. Fakultas Peternakan UNRAM-Disnak NTB-JICA Jepang.
- Fukuyama, F. 2001. Social Capital, Civil Society and Development. *Third World Quarterly*, Vol 22, No. 1, pp 7-20.
- Hasniati dan Uhd A., 2005. Pencurian Ternak Sapi di Pulau Lombok. *Laporan Penelitian*. Fakultas Peternakan Universitas Mataram-BAPPEDA NTB.
- Lawang, R. 2005. *Kapital Sosial Dalam Perspektif Sosiologik : Suatu Pengantar*. FISIP UI Press.
- Mashur dan A. Muzani, 2004. Prospek Pengembangan Pusat-Pusat Pembibitan Sapi Bali di Lahan Marginal Untuk Mendukung Penyediaan Sapi Bakalan di NTB. Sumber: www.ntb.litbang.deptan.go.id/2004/MU/prospekpengembangan.doc. Dikunjungi tanggal 5 November 2008.
- Mashur., A. Muzani, A. Sauki. 2001. Manajemen Kandang Kolektif Untuk Menunjang Integrasi Ternak Pada Sawah Irigasi (Kasus Pada Kelompok Tani " Gerak Maju" Desa Sepakek Kab. Lombok Tengah). *Prosiding Seminar Nasional Pengembangan Teknologi Pertanian*. Mataram 30-31 Oktober 2001.
- Merriam, S.B. 2002. *Qualitative Research in Practice*. Jossey-Bass. A Wiley Company : San Francisco.
- Midgley, J and Tang, K-l., 2001. Social Policy, economic growth and development welfare. *Int J Soc Welfare* 2001 : 10 : 244-252. © Blakcwell.
- Putnam, R. 1993. *Making Democracy Work Civic Traditions in Modern Italy*. Princeton University Press. Princeton, New Jersey.
- Ritzer, G. 2007. Sosiologi Ilmu Pengetahuan Berparadigma Ganda (*terjemahan*). PT. Raja Grafindo Persada. Jakarta.

Sasongko WR, Yohanes G. B dan Arif S., 2005. Pola Pemeliharaan Ternak Sapi Bali Di Lahan Kering Dataran Rendah Lombok Timur. *Balai Pengkajian Teknologi Pertanian NTB*.

Scoones, I. 1998. 'Sustainable Rural Livelihoods: A Framework for Analysis', *IDS Working Paper* 72.

Sembiring, H. T. Panjaitan, Mashur, D. Prptommo, A. Muzani, A. Sauki, Wildan, Mansyur, Sasongko dan Nurul, A. Prospek Integrasi Sistem Usaha Tani Terpadu Pemeliharaan Sapi Pada Lahan Sawah Irigasi di Pulau Lombok. *WARTAZOA* Vol. 12 No. 1 Th. 2002.

Soembodo, B. 2006. Aspirasi Sosial Budaya Masyarakat Pedesaan Terhadap Kesejahteraan Keluarga. Lihat dalam : <http://www.journal.unair.ac.id/filerPDF/ASPIRASI%20SOSIAL%20BUDAYA%20MASYARAKAT%20PEDESAAN.pdf> Dikunjungi tanggal 10 November 2009.

Suharto, E. 2006. Peta dan Dinamika *Welfare State* : Pelajaran apa yang bisa dipetik untuk membangun Indonesia ?. Lihat dalam : <http://www.policy.hu/suharto/Naskah%20PDF/UGMWelfareState.pdf>. Dikunjungi 28 Desember 2009.

Taqiuddin, M dan Hasniati. Analisa Kemiskinan Partisipatif pada Peternak Sapi di Kawasan Pinggiran Hutan Lombok Tengah. BAPPEDA Nusa Tenggara Barat. 2007.

UNDP-BAPPENAS, 2007. *Laporan Pencapaian Millenium Development Goals Indonesia 2007*. BAPPENAS, Jakarta. Pp : 18-20.

Woolcock, M. 1998. Toward a theoretical synthesis and policy framework. *Theory and Society* 27 : 151-208.

Zaini, A. 2000. Rural Development, Employment, Income and Poverty in Lombok, Indonesia. *Ph.D Thesis*. Socioeconomic Studies on Rural Development Band/Vol. 21. Wissenschaftsverlag Vauk Kiel KG.

Lainnya :

Baca: Dari Ronda Kampung Menjadi Pam Swakarsa. KOMPAS, 12/03/2001.

Baca: Menggugah Semangat Melawan Kejahatan. KOMPAS, 15/03/2000.

http://id.wikipedia.org/wiki/Pulau_Lombok

Status and Prospects of the Private-Enterprise-Linkage (PEL) Dairy Production in Inner Mongolia, China: A Case of a Dairy Enterprise in Hohhot

Yousuke Choumei

Research Fellow of the Japan Society for the Promotion of Science
Ryukoku University
choumei@mail.ryukoku.ac.jp

Wo Jin Hu

Research Institute of Economics and Resources Development, Inner Mongolia
College of Finance and Economics
wuyinga2005@yahoo.co.jp

Abstract

Recent economic growth in Inner Mongolia resulted in rapid expansion of dairy production brought about by the partnership between a private dairy enterprise and dairy farmers, called the Private-Enterprise-Linkage (PEL). This paper presents the case of the Inner Mongolia Yili Industrial Group Co. Ltd.'s partnership with the dairy farmers. This paper highlights the impacts of the enterprise's assistance to the production and management capabilities of the farmers.

The results of the study indicate that the enterprise's support significantly increased both milk yield and size of dairy cattle of the farmers. The survey also indicates three important necessities, namely: the price mechanism of milk which should be linked to milk quality in order to strengthen farmers' awareness; the technological improvement reserving corn silage; and a standardized system providing roughages and semen for a long-term development strategy.

Introduction

The production system of the Chinese dairy industry has significantly improved. The individual sale of raw milk has shifted to an open door economic policy that started in the rural areas in 1978. As such, the dairy industry was recognized by the National Development and Reform Commission in 1989 as an important industry that would promote the Chinese national economy (Hasegawa et. al. [2]). After the 1990's, the Chinese diet has changed greatly with their rapid economic development, resulting in a large increase in the consumption of livestock and dairy products, particularly milk¹. Furthermore, the State Council of the Chinese government announced the "National Plan of Action for Nutrition in China" in 1997 from the perspective of promoting people's health, and the milk cows breeding and dairying as prioritized industries (Kitakura and Li [3]).

Inner Mongolia Autonomous Region (or “Inner Mongolia”), the area which shows a particularly significant growth in China, is undergoing such significant changes in the system of agricultural production and the structure of food consumption. Inner Mongolia surpassed Heilongjiang Province in the volume of raw milk production in 2003, and thus, it has developed as the largest area of dairy and milk industries in China. The volume of raw milk production in Inner Mongolia increased significantly from 798000 tons in 2000 to 9.093 million tons in 2007, which accounts for 25.8% of the entire raw milk production in China².

Recently, the mode of dairy production under a contract with a corporation, called the Private-Enterprise-Linkage(PEL) has been increasing primarily in sub-urban areas to replace the traditional compound mode of dairy farms that combines breeding of yellow cattle and other livestock with agriculture. The increasing demand for milk and dairy products can be cited as its background, and capital intensive dairy farms with high productivity are being promoted. On the other hand, after the melamine adulteration incident in 2008, a.k.a. Chinese milk scandal, it has emerged as an important goal to realize milk cow breeding and dairy production management that cater to consumers who demand reliable and safe, as well as nutritious milk and dairy products. It can be said that there are a small number of studies that pay attention to such an interrelation between farmers and corporations to clarify the relevant production mechanism³.

This paper, thus, focuses on the form of production of PEL type which is on an increasing trend in Inner Mongolia, and attempts to clarify the interrelation between dairy farmers and *Inner Mongolia Yili Group Company* (or “Yili”), a milk product manufacturer contracting with farmers. Building on this, the paper discusses the problems that should be addressed in the future.

Overview of the Milk Product Manufacturer, Yili

Yili was founded on February 18, 1993, as *Inner Mongolia Yili Industrial Group Company Limited* when Huhhot Muslim Dairy Food General Factory adopted the shareholding system upon the approval by the Huhhot Municipal Commission for Economic System Reform. It was listed on the Shanghai Stock Exchange in March, 1996 and was renamed as *Inner Mongolia Yili Group Company* on February 5, 1997.

Yili's sales in 2008 totaled 21 billion 538 million RMB, an increase of 12.8 percent compared with the previous year. Its sales for the first quarter of 2009 was 5 billion 99 million RMB, an 8.25 percent increase from the previous year. Yili is the No.1 manufacturer of milk products in China. Yili breeds more than two million milk cows not only in Inner Mongolia but all over China, including Heilongjiang, Hebei, and Shandong Provinces and Xinjiang Uyghur Autonomous Region. Yili has signed contracts with over five million farmers for dairy production. In addition, it has more than 700 intensive ranches with less than 1,000 cows and 28 pastoral parks with 1,000 or more cows⁴. The case taken up in this paper involves one of the pastoral parks which raise 1,000 or more cows.

Yili started to adopt the “enterprise + farmers” model in 1997. Under this model, an enterprise contracts farmers for their dairy production. The enterprise assists farmers by providing technical assistance on breeding and management, selling them inexpensive compound feeds, and providing them with a loan or subsidy⁵. On the other hand, farmers are required to produce raw milk that satisfies the milk quality standard as stipulated in the contract with the enterprise. The raw milk that has met the standard is sold to the enterprise at the price prescribed in the contract. While this model enables an enterprise to procure a certain amount of raw milk and to use production materials efficiently, it also ensures the sales channel for raw milk. The advantages of the model are, thus, great for both.

Under this model of “enterprise + farmers,” however, contracted farmers were dispersed over diverse areas, which made it difficult for an enterprise to monitor dairy cattle health and provide hygienic advice to farmers in terms of the quality of raw milk in addition to providing them with technical advice on breeding management and feeding methods. For this reason, Yili attempted to shift to the “enterprise + pastoral zones + farmers” model which encourages the farmers to engage in dairy production in pastoral zones to improve efficiency.

Assistance from the Enterprise

Pastoral Zone A, which is the subject of the study, is located in Tumed, about 70 km northwest of the center of Huhhot, amidst one of the major corn-growing areas in Inner Mongolia⁶. The pastoral zone was constructed in August 2003. It has two milking stations in its center, where farmers milk their cows⁷. Farmers are prohibited to sign a raw milk sales contract with milk product manufacturers other than Yili, and are required to sell all raw milk produced to Yili.

As shown in Table1, the pastoral zone has accommodated 40 farm households as of August 2009. Figure 1 shows the interrelationship between the enterprise and farmers. About 2,200 Holstein cows are raised in the pastoral zone, with an average of 55 cows per household. Around 1,100 out of those cows are milking cows, and the total amount of milk produced per day is 20 tons, with an average of 18kg of milk produced per cow per day. There are 26 Yili employees who are working in the pastoral zone, 23 of them working full-time and three on a part-time basis.

In this section, we will give an overview of the enterprise's assistance to farmers during the following three periods: the opening period of the pastoral zone, during which farmers moved into the zone; the period after farmers have moved into the zone; and the period after the Chinese milk scandal, which had an enormous impact on farmers and consumers.

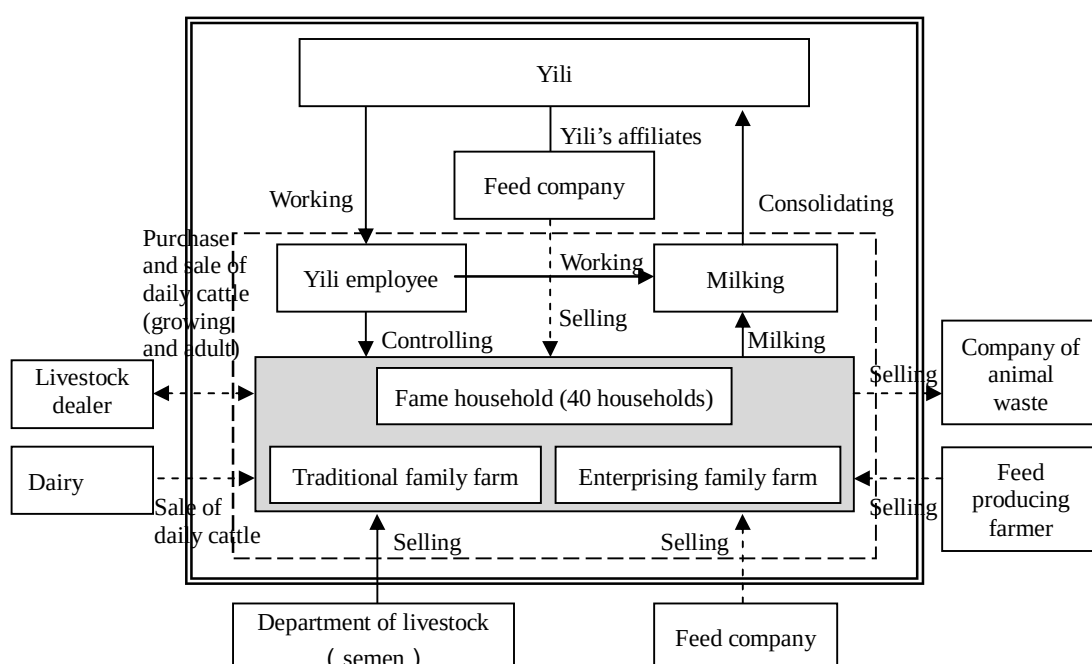
Assistance During the Opening Period

Yili presented farmers with a Management Assistance Program which offered several privileges when they recruited tenant farmers for the pastoral zone. The program entitled farmers to the free use of a milking.

Table 1. Basic information about the pastoral zone (August 2009).

Item	(Measurment Unit)	Frequency
Numbers of farm households	(houshold)	40
Number of Holstein cows	(head)	2,200
Number of milking cows	(head)	1,100
Total amount of milk produced	(t/day)	20
Employees		26
Full-time workers	(salary : 1,800RMB/month)	23
Part-time workers	(salary : 1,000RMB/month)	3

Source :Survey in August 2009



Source: Survey in August 2009



Figure 1. Structural Linkage Framework in Dairy Industry between Farmers and Private Corporation Yili

Note: the definitions of Yili's linkages are as follows: indicating the range of Yili's linkages in the field of dairy production; indicating Yili's linkages within the pastoral zone; and indicating the range of individual farm management. The arrows are the flows of decision making in the Yili's linkages shown as follows: indicating order line of Yili's linkages in which farmers have no influence in decision making; and with dotted line indicating order line in which farmers have significant power in decision making.'

station that Yili has constructed in the zone, the purchase of compound feeds made by a Yili's affiliate at a low price, and the free repair of their house and cowshed in the event of its necessity. Yili also offered a placement service for positions at Yili's affiliates to the incoming farmers' family members as well as provided farmers with bovine semen for free until the number of cows raised by a farm household reaches around 40 as part of the assistance program⁸.

Meanwhile, Yili imposes two requirements on a prospective tenant of the pastoral zone. One is to raise 25 or more Holstein cows, and the other is to live and engage in dairy production in an all-in-one facility with a house, a cowshed, a banker silo for storing corn silage, and a paddock (6mu in total), which the tenant must purchase⁹.

The first requirement was arguably intended by Yili to ensure a certain amount of milk shipment by accommodating farmers who raise a considerable number of cows, and the second requirement, to enable the uninterrupted collection of raw milk by providing farmers with conditions for their continuous production. In other words, the former requirement implies assured volume of raw milk production as a short-term management goal, and the latter, corporate continuity as a long-term management goal.

Regarding the first requirement presented by Yili, farmers themselves had to purchase cows not from Yili but from livestock dealers or other farmers. At that time, milking cows were traded from 15,000 RMB to 18,000 RMB per head, and female calves, from 4,000 RMB to 7,000 RMB per head. With regard to the second requirement, a farmer had to pay 217,000 RMB for the all-in-one facility in 30 years provided that no interest or fee would be accrued.

A large amount of initial investment was thus necessary to move into the pastoral zone. For this reason, farmers who moved into the pastoral zone supposedly had a considerable amount of money.

Assistance After Moving into the Pastoral Zone

In 2004, the year following the start of the recruitment, 39 out of 40 units were occupied. Yili gave technical advice to farmers several times a year concerning cow breeding management and feed design for each growth stage.

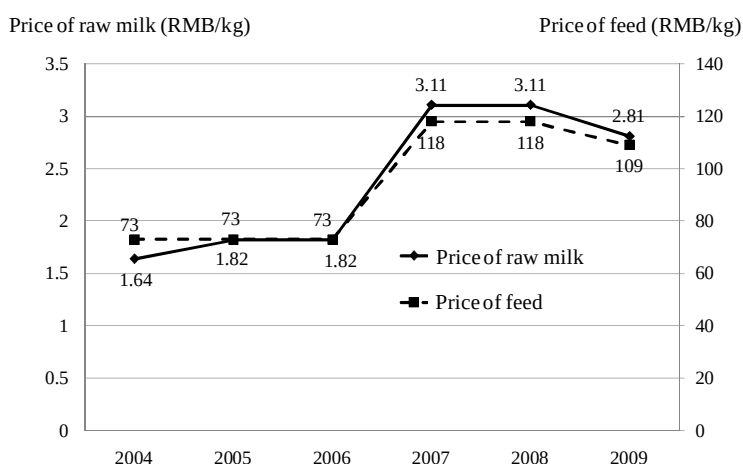
As part of the Management Assistance Program offered by Yili, if compound feeds made by a Yili's affiliate were fed to dairy cattle, a subsidy of 0.2 RMB per 1 kg of raw milk is added to the price of milk, and if farmers wanted to purchase the compound feeds, Yili would pay for the feeds, the cost of which, would later be deducted from the farmers' sales of milk. Although Yili recommended feeding such compound feeds, farmers were free to purchase feeds from any feed company. There was no obligation concerning an expansion in the number of cows bred and investment in equipment either.

Although farmers bred dairy cattle under such an assistance program, those who have never raised more than several cows or those who were primarily engaged in nomadic pastoralism did not have enough experience to raise a large number of cows. The volume of milk from cows bred by such farmers diminished in the second and subsequent years. This was caused primarily by the breeding management immediately after cow's delivery and the lack of expertise in feed storage and feeding technologies. Furthermore, with a decline in the selling price of calves and a surge in feeds prices, the business environment for farmers deteriorated during this period. Consequently, many farmers with insufficient breeding management technologies ceased operation and left the pastoral zone.

This situation has forced Yili to recruit new tenants. As it was the time when the business environment had already been deteriorated, however, no new applicants came under the existing conditions. In order to get new tenants, Yili decided to relax or eliminate the existing requirements. As regards the above first requirement for a tenant, the restriction was eliminated on the number of Holstein cows bred. Regarding the second requirement, the all-in-one facility was set on a rental basis. The rent was set at 500 RMB per month. As a result, the 40 units were occupied in 2007.

Assistance after the Chinese milk scandal

The prices of live cattle and raw milk started to rise in the fall of 2007. The price of live cattle almost doubled, compared to the previous year, and the price of raw milk rose to about 70% from 1.82 RMB/kg to 3.11 RMB/kg (Fig.2). At the same time, however, the price of imported feeds began to surge, exerting a pressure on the production cost for dairy farmers. Consequently, many of farmers began to sell new-born calves instead of keeping them as replacement for the dairy cattle, resulting in a certain shortage of dairy cattle resources.



Source: Survey in August 2009

Figure 2. Change in price of raw milk and feed

It was under such a circumstance that the Chinese milk scandal occurred in September 2008, which involved the adulteration of melamine into raw milk, milk products, and feeds. Yili and other milk product manufacturers raised the milk quality standards in accordance with a government order. In response, Yili continued to purchase all raw milk produced by the contracted farmers. However, as a new contractual clause, they would not purchase all raw milk that did not pass the milk quality standards even though compound feeds of the Yili's affiliate had been fed in accordance with feeds design, as well as all contaminated milk due to diseases such as bovine mastitis.

The milk scandal prompted the government to raise the standards in milk products, and consequently, Yili's management had become stricter. Previously, the quality of milk had been ensured through the following procedure. Raw milk undergoes milk quality and hygiene examinations immediately after it is produced. If a problem occurs, all raw milk collected in the tank is discarded, and the sales of raw milk from the problem cows are suspended for a certain period of time. After the Chinese milk scandal, an inspector conducts a quality inspection of feeds, and gives advice to farmers concerning breeding management and feeding methods. Yili is trying to implement the inspection and control system to ensure high quality of raw milk and prevent the recurrence of the Chinese milk scandal.

Assistance enjoyed by farmers

The profile of farmers involved in this case study is shown in the Table 2. Farm household A moved to the pastoral zone in 2003, when the zone was constructed, and Farm household B moved in 2004. As of August 2009, Farm household A kept 60 cows, and Farm household B had 54. They raised an average number of cows in the pastoral zone. They both purchased compound feeds from the Yili affiliate. The roughage is purchased from neighboring farmers in cash. As regards insemination, they both purchased semen from the local department of livestock and asked a veterinarian in the pastoral zone to carry out the insemination.

Table 2. Profile of samples of farm households (August 2009).

Item	(Measurement Unit)	Farm Household A	Farm Household B
Family structure	(age) (○ :feeder)	○ Husband(34) , ○ Wife(34) Son(9)	○ Husband(53) , Wife(51) Daughter(25) , ○ Sister's husband(27)
Starting year of farm:	(year)	2003	2004
Number of cows	(head)	45	27
Mean of milk yield	(kg/head/day)	25	20
Number of cows:	(head)	60	54
Milking cows	(head)	30	24
Dry cows	(head)	30	30
Raising cows	(head)	30	30
Purchased feed:	(RMB/kg)	0.08	-
Hay	(RMB/kg)	0.16	0.14 ~ 0.16
Silage corn	(RMB/50kg)	109	109
Formula feed	(RMB/50kg)	17(Corn Powder)	-
Else	(RMB/head)	35	60
Fee	(RMB/cow/year)	150	200 ~ 300
Cost of veterinarian and medicine	(RMB/month)	500	1,200
Return	(RMB)	Very few	Very few
Saving	(RMB/month/person)	2,500	3,000
Income	(kg/head/day)	25 ~ 30	25 ~ 30
Milk yield	(kg/head/day)	10 ~ 15	15
Mean	(kg/head/day)	35 ~ 40	40
Immediate parturition	(parity)	5 ~ 6	5 ~ 7
Peak			
Parity number			
Plan of feeding		• Bull calf has been sold at some time after calving • Renew one third cows head every year	• Bull calf has been sold at some time after calving • Bing down high producing cows
Problem of feeding control		• Establish technologies for silage production and store	• Prevention of disease • Unequal milk yield by milking cows • Establish technologies for silage production and store
Future of Livestock Keeping		• More than 50 milking cows	• From 25 to 30 milking cows • Establish technology for self breeding

Source :Survey in August 2009

Table 2 shows that the number of cows raised and the volume of milk produced have increased since they have moved to the zone. This could be attributed to the technical advice by Yili and their improved proficiency in livestock breeding. In addition, the purchase of highly nutritious compound feeds from the Yili affiliate and feeding management based on the compound feeds could have also contributed to such increase in the volume of milk produced.

Both of them cited the tentative proxy payment scheme in purchasing the compound feeds from the Yili affiliate as the most beneficial assistance from Yili. They both purchased the compound feeds in lump sum once every several months or twice a year. As indicated in Table 2, it had been a great burden for the operations of both farmers, who have a small amount of cash saving, to purchase roughage and compound feeds for cows in cash while managing to deduct their living expenses from the monthly sales of raw milk¹⁰.

Both farmers also claimed that Yili's strategy of buying all the raw milk that they have produced ensures a sales channel. These measures are suggested to work toward lessening the economic and psychological burden on farmers.

Both farmers, however, cited two problems with the current dairy production. First is the insufficient expertise of the farmers in the roughage production technologies. The feeds quality varies in each farmer. As a result, they have to adjust the feeds design based on cow's preference and amount of feeds given to them. The second problem is the prescribed heads of cows to be raised. While Mr. A and Mr. B intended to increase the number of cows for a corresponding increase in milk production, they are bound by the policy to maintain 100 heads of cow only. Thus, the farmers had to decide whether to stay in the pastoral zones and raise a maximum of 100 cows, or leave the pastoral zone for a large-scale cattle production.

Problems that need to be addressed in the Private Enterprise Linked (PEL)-Type Dairy Farms

We have, thus, far attempted to clarify the interrelationship between an enterprise and the farmers (Table 3). As a result, it proved to be a beneficial relationship for both Yili and farmers. This partnership enabled Yili's uninterrupted collection of raw milk, and it ensured farmers a sales channel for raw milk because of the complete and exclusive purchase of Yili. This arrangement also reduces the operational burden on farmers through the tentative proxy payment for feeds by Yili. However, these arrangements have also created some problems as discussed below.

1. The improvement of the milk quality is not a priority of the farmers because of the current premium pricing. The milk price depends on the fat contents. The high is the fat content, the higher will be the premium price. A corresponding subsidy is also given to the farmers who feed their cattle with compound feeds from Yale. Given these arrangements, the farmers would no longer be interested in improving the quality of milk. Instead, they would just aim to produce milk with higher fat contents and feed the cows with compound feeds from Yili. These strategies ensure income. But, the milk quality is in question.
2. The farmers have not been observing proper storage of the silage. As observed in the farm households, the silage is covered with plastic sheets and is left to induce anaerobic fermentation. However, the plastic covers are left open, even during the feeding period. With these, the stored silage would dry immediately and would block the fermentation process. Thus, good quality silage could not be produced. There is a need to provide technical assistance on feed storage technologies.
3. The current arrangements between PEL and the farmers seemed problematic. For instance, Yili does not produce roughage, which required farmers to look for good quality roughages outside the zone. Yili may wish to consider producing roughage also to ensure good quality products. As regards the number of cows to be raised, the farmers should only raise a maximum of 100 cows. To maximize milk production, Yili may also explore implementing breeding techniques that would ensure high quality raw milk in order to adjust the raw milk production. In summary, the PEL should try to establish a more integrated production system to ensure good quality milk products.

Table 3. Arrangements between the farmers and Yili in dairy production.

	Yili (Dairy Enterprise)	Farm household
Goal of management	• Short-term goal :to ensure milk yield and quality • Long-term goal :to sustain a corporate continuity	• to increase family income
Correspondence in Management Assistance Program	• Management Assistance Program in the opening period of the pastoral zone • Free use of a milking station • Use of feeding facility (barn and paddock) • Purchase of compound feeds made by a Yili's affiliate at a low price • Purchase of the whole amount of raw milk produced • Placement service of employment in positions at Yili's affiliates for the incoming farmers' family members • Management Assistance Program in the period after farmer's moved into the pastoral zone • Tentative defrayment of feeding by Yili • Setting of premium price depending on milk fat contents • Management Assistance Program in the period after the Chinese milk scandal in 2008 • Purchase of all raw milk that failed in the milk quality standards	• Increase in the number of milking cows • Increase of milk yield • Improvement of milk quality
Correspondence in technology support	• Management Assistance Program in the period after farmers moved into the pastoral park • Technical advice of technology for feeding management • Technical advice of technology for feed design for each growth stage • Technical advice of technology for feed production and store • Management assistance program in the period after the Chinese milk scandal in 2008 • Clarification of problems and technical advice in feed design	• Acquisition of technology for feeding • Acquisition of technology for breeding • acquisition of technology for culling and selection • Acquisition of knowledge and technology for prevention of disease
Future subject	• Resetting of premium price for milk quality improvement • Establishment of production system integrated with sale management in feeding and breeding	• Acquisition of technology for silage store • Increase of the number of milking cows

Source :Survey in August 2009

Acknowledgment

The author would like to express a deep gratitude to those affiliated with Yili and farmers who have cooperated in this survey. This study was conducted under the Grants-in-Aid for Scientific Research (Grant-in-Aid for JSPS Fellows, No.21-9256).

Notes

1. See *China Agriculture Yearbook*, edited by the Editorial Board of China Agriculture Yearbook, for each year.
2. See *Inner Mongolia Statistical Yearbook*, edited by Statistics Bureau of Inner Mongolia, for each year.
3. Prior studies include References [1] and [4].
4. See Yili's website (<http://www.yili.com/qygongmingbgnew/q1/index1002.html>).
5. For instance, a enterprise provided a subsidy of 3,000 RMB per head to a farmer purchasing a Holstein cows.

6. Yili has another pastoral zone in Huhhot. That pastoral zone is used for grazing and breeding primarily using organic feeds: dairy cattle are raised mainly for manufacturing premium products there.
7. Although tenants of the pastoral zone are dedicated dairy farm operators, it is not necessarily the case that a dairy farm operator himself is engaged in dairy farms. There is a case where an operator who rents the facility leaves dairy production to resident workers hired by him.
8. A free distribution of semen was done from 2003 through 2005.
9. 1mu is approximately 6.67a.
10. When the Chinese milk scandal occurred, the feed company affiliated with Yili was closed for two months, forcing farmers to purchase more expensive feeds from other companies. Farm household. B, having spent all his cash to purchase compound feeds, was left with no cash to purchase corn silage and subsidiary feeds. So Farm household. B found himself with no choice but to sell milk cows to acquire cash for buying feeds to be fed.
11. At present, a premium is added to the milk price in four stages depending on milk fat contents. Milk with fat contents up to 2.80–2.85% is priced at 2.31 RMB. The milk price increases by 0.1 RMB as milk fat contents increases by 0.05%. Milk whose fat contents exceed 2.95% belongs to the highest rank, with the price of 2.61 RMB. In addition, if a farmer feeds his dairy cattle with compound feeds made by the Yili affiliate, a subsidy of 0.2 RMB per kg is added to the milk price.

References

- Chao, Ketu; Kusano, Eiichi; and Nakagawa, Mitsuhiro. 2006. "Changes in the Dairy Farming Village Economy with a Dragon Head Enterprise Expansion in Inner Mongolia, China: A Case Study on a Dairy Enterprise and Farmers in Huhhot." *Journal of Agricultural Development Studies*. Vol.16. No.3. pp. 55-62.
- Hasegawa, Atsushi; Taniguchi, Kiyoshi; and Shishimaru, Yuichiro. 2007. "Kusoku-ni Hatten-suru Chugoku-no Rakuno-Nyugyo [Rapidly Developing Dairy and Milk Industries in China]." *Livestock industries information*. Vol.209. pp.73-116.
- Kitakura, Tadahiko and Li Kong. 2007. "A Study of Situation and Promotion Policy of Dairy Farming and Dairy Industry in China [in Japanese]," Hokkai-Gakuen University, the journal of economics. Vol.54.No.4. pp.31-50.
- Yasaka, Masamitsu. 2008. "Chugoku, Nai-mongol Rakuno-sobyō — Rakuno-bubble-to Rakuno-seisan-no Ninaite-no Henyō — [Sketch of Dairy Farming in China and Inner Mongolia: Dairying Bubble and the Transformation of Dairy Producers]," *Livestock industries information*". Vol.230. pp.64-84.

The Sustainable Agricultural Development Extension Program (SADEP): Enhancing Health, Education, Livelihood and Protection (HELP) of the Environment in Occidental Mindoro, Philippines

Dr. Susanita G. Lumbo
Mary Yole Apple M. Declaro
Lolita L. Bautista
Elmer G. Ruedas
Venessa S. Casanova
Occidental Mindoro State College
Murtha Campus, San Jose, Occidental Mindoro

Abstract

This paper highlights the significance of the Sustainable Agricultural Development Extension Program (SADEP) in promoting environmental education and sustainable livelihood in the uplands and farming communities of Occidental Mindoro, Philippines. SADEP advocates for the use of ecologically sound farming practices; helps generate income through proper utilization of locally available resources; trains farm households to increase their productivity; and improves community awareness on environmental conservation. This program is a collaborative undertaking of the Occidental Mindoro State College, and other government organizations and private individuals to enhance agriculture, environment, livelihood and education of the upland communities in the province of Occidental Mindoro.

Observed effects of the program include the following: (1) adoption of ecologically sound farming practices, (2) generation of sustainable livelihood, (3) increased farm productivity and income, (4) healthier, cleaner and greener communities, (5) improved farmers' access to information, technology, and service institution, (6) forging of partnerships among development organizations and agencies, and (7) enhanced decision-making capability.

This program proves that multisectoral partnership must be institutionalized to help monitor, evaluate, and sustain the extension programs. Existing linkages must be strengthened and other organizations with similar undertakings should be invited to improve delivery of services. Continuing capability building of communities especially in natural resource management and entrepreneurship is necessary. An impact study should be conducted to find out how much the projects had contributed thousands attaining quality of life in the rural communities.

Introduction

Agriculture is one of the major economic sectors that are most vulnerable to environmental degradation, simply because it is so directly dependent on natural systems and resources (Guzman and Guzman, 2000). The widespread adoption of modern and industrial agriculture has adverse impact on the quality of soils, water and forests, leading to erosion, pollution and loss of biodiversity (Zamora, 1999). The increasing population and indiscriminate farm practices like excessive use of chemical pesticides and *slash-and-burn* method of cultivation have brought havoc to the environment and have contributed in the decline of agricultural productivity.

Sustainable agriculture has been globally regarded as a solution to the threatening problems affecting human survival. It promotes the utilization of resource-conserving technologies and integrated farm management practices. These include nutrient recycling, integrated nutrient and pest management, soil and water conservation, and diversified production systems (Thomson, 1996).

Occidental Mindoro is predominantly an agricultural province in the Philippines. Majority of its households are engaged in agriculture. Results of the simplified community appraisal conducted in selected barangays and indigenous people (IP) communities reveal many problems besetting farming families. To contribute in achieving better lives in the province, the Agriculture Department of Occidental Mindoro State College (OMSC)-Murtha Campus pooled its strength and resources and came up with an extension program called the "Sustainable Agricultural Development Extension Program (SADEP).

SADEP is an extension program managed by Agriculture faculty researchers and extensionists with the active participation of the students especially those with Agricultural Extension and Community Organizing subjects. The main objectives are to expose students to real life situations and to develop their potential for community development work. As a program, it aims to promote the use of ecologically sound farming practices; help communities generate income through proper utilization of locally available resources; train farm households to increase their productivity; and, increase community awareness on environmental conservation. It is now on its eight year of actively promoting environmental education and sustainable livelihood in the uplands, farming and coastal communities of the province.

The target beneficiaries are the upland communities especially the IPs, the farmers and their households, and the fisherfolks. It is a continuing program as long as Agricultural Extension and Community Organizing subjects are offered and required in the curriculum.

SADEP is funded mainly by the Institution but it gets support from collaborating non-government, government, and private organizations for specific extension activities and projects.

Objectives

This paper presents the extension approaches and strategies used in enhancing the lives of the rural communities in Occidental Mindoro. Specifically, this intends to:

1. Describe the methodologies employed in the implementation of SADEP;
2. Discuss the different interventions and technologies promoted and the agencies involved;
3. Analyze the observed effects of the program; and
4. Identify recommendations for the sustainability of the program.

Methodologies in Project Implementation

Participatory approach

All extension activities were designed to harness the active participation of the community and collaborating organizations. The conduct of simplified participatory rapid appraisal (PRA) in all identified communities was compulsory. PRA gave the stakeholders the opportunity to identify the real needs of the community, formulate workable plans, and actively participate in project implementation. The preparation of project proposal or concept papers is also done in partnership with the concerned local government units, people's organizations, and private agencies.

Education institution approach

Axinn (1988) identified education institution as one of the approaches used in extension. This approach considers that agricultural institutions have the technical knowledge and expertise that are relevant to the enhancement of the quality of life of the rural communities. In addition, it suggests that the instructors and students need to interact with the community for them to become effective teachers and future farmer entrepreneurs and community development workers.

This approach strengthened the provisions of the General Appropriations Act wherein state universities and colleges (SUCs) need to perform extension function. This approach serves as basis for OMSC in the conceptualization and implementation of its extension projects.

Sourcing of funds and establishing linkages with other development organizations

The OMSC-Extension Department through SADEP had either facilitated or strengthened the forging of partnerships/cooperation between OMSC and other development organizations. It had solicited technical and financial assistance from various agencies for their projects.

Result demonstration

Result demonstration was found as the most effective extension method in the promotion of organic fertilizer production. Many farmers had started producing their own organic fertilizers just within their backyard after attending the training. They had likewise visited OMSC-Murtha Campus to seek further information on the technology.

Significant contributions of SADEP

During the last eight years (AY 2001-2010) of project implementation, SADEP had conducted a total of 81 extension activities with an average of 10 each year.

Promoting environmental conservation and sustainable livelihood

The training topics, including the technologies promoted among the rural communities are presented in Table 1. Most of the training programs conducted were along the areas of agriculture and environmental conservation. This is because Occidental Mindoro is an agricultural province and most of the economic activities of the people are related to agriculture and environment.

Table 1 also shows that organic fertilizer production, integrated pest management (IPM) and biodiversity conservation were the widely promoted technologies in the province. This can be explained by the fact that the province was a forerunner in the IPM movement of the country when *Kasakalikasan* program was implemented in 1993. Similarly, OMSC has been advocating resource-based and environment-friendly technologies. OMSC has established an enhanced bio-organic fertilizer production plant that caters to the increasing demand for organic fertilizer not only in Occidental Mindoro but in other places as well. The training topics concerning conservation of biodiversity were also popular because OMSC is active in environmental conservation advocacy. The two on-going projects, namely the Sustainable Upland Development Project for Mangyan Communities (SUDP) in Sitio Salafay and the Poverty Alleviation Promotion thru Environment and Livelihood Program for the Buhid Mangyan Community (PAPEL Buhid) in Sitio Bato-ili promote sustainable upland technologies and livelihood in IP communities.

Table 1. Seminar areas and topics of the SADEP in Occidental Mindoro, 2001-2010.

AREA	Topics Covered/Technologies Promoted	No. of Seminars
Agriculture	Integrated Farming System	12
	Organic Farming	26
	Integrated Pest Management	28
	Livestock Production and Management	10
	Crop Production and Management	20
Environmental Conservation	Nursery Establishment	4
	Soil and Water Conservation	8
	Biodiversity Conservation	20
	Solid Waste Management	12
	Climate Change	
Livelihood	Organic Fertilizer Production	30
	Food Processing and Preservation	12
Education	Restrengthening Cultural Values	12
	Jingle Making and Singing Contest	1

Reaching out to the rural communities and municipalities

Table 2 shows the municipalities and communities that were covered by the project, including the number of individuals that were involved in the different extension activities. It is also evident in Table 2 that majority (54.78%) of the participants were women. This suggests that women are interested and actively involved not only in farming but also in natural resource management activities.

The IPs, considered as one of the treasures of the island of Mindoro are always given utmost priority of the OMSC. They are the province's poorest so that special projects like the SUDP and PAPEL Buhid were established to empower and improve their quality of life.

Table 2. Distribution of seminar participant by gender, municipality and barangays.

Municipality/IP Community	No. of Barangays/Tribes	No. of Participants		
		Male	Female	Total
San Jose	18	1,830	1,992	3,822
Rizal	4	234	550	784
Calintaan	5	498	604	1,102
Sablayan	6	987	847	1,834
INDIGENOUS PEOPLE				
Hanunuo	5	575	850	1425
Buhid	3	367	587	954
Batangan (Tau-Buhid)	3	348	489	837
Iraya	1	42	30	72
Ratagnon	1	32	39	71
Grand total		4,913	5,988	10,901
		45.07%	54.93%	100.00

Involving various stakeholders in project implementation

Table 3 presents the agencies involved in the implementation of extension activities, including the form of assistance that they provide. Among the government agencies, the Department of Agriculture (DA) was SADEP's most active partner in the conduct of extension activities. This is consistent with the DA's vision of agricultural productivity and enhancement. The local government units (LGUs) were likewise very supportive of the interventions done in their locality most especially when they see their constituents benefit the most from the projects. Other government agencies that took part in the various project activities were the Department of Environment and Natural Resources (DENR), Department of Trade and Industry (DTI), Department of Health (DOH), and Department of Education (DepEd.)

Table 3. Participating agencies and organizations in the SADEP Program.

A. Government Agencies
1. Department of Agriculture
2. Local Government Units (Mayor's Office and Barangay Council)
3. Department of Trade and Industry
4. Department of Environment and Natural Resources
5. Department of Education
6. Department of Health
B. Non-Governmental Organization/People's Organization
1. Plan San Jose
2. Apostolic Vicariate of San Jose Livelihood Movement, Inc.
3. Pamayanang Kristiyano
4. Farmers' Organizations and Cooperatives
5. Occidental Mindoro State College Teachers and Employees Multi-purpose Cooperative (OMINACOTEMUPC)
6. Lingap Maralita, Inc.
7. Catholic Mangyan Mission
8. Habanan Buhid
C. Private Organizations
1. New West Coast Agricultural Products, Inc. (West Coast)
2. Malaluan Piggery Farm
3. Zapanta Maternity and General Hospital
4. Bayer Philippines, Inc.

Several non-government organizations (NGOs) were likewise very supportive of the extension undertaking of the College. Foremost is the Plan-San Jose, which served as OMSC's partner in the SUDP. It had also extended financial assistance to PAPEL Buhid during the conduct of PRA.

The AVSJLM, Inc. and Lingap Maralita were partners in the promotion of IPM in the province. The Catholic Mangyan Mission and Habanan Buhid facilitated the entry of OMSC in the IP communities.

West Coast, located in Sablayan was the most generous among the private organizations. It had sponsored all extension activities conducted in different communities of the municipality. It is OMSC's active partner in the promotion of organic farming in the province. West Coast produces its own organic fertilizer as it has huge depository of animal waste coming from their piggery and poultry projects. It likewise grows organic vegetables for local distribution.

Observed Impacts of the Program

- **Adoption of ecologically-sound farming practices.** The different training courses and seminars conducted had increased the farmers' awareness about the ill-effects of chemical agriculture. The farmers had admitted that their use of chemicals and inorganic fertilizers was reduced.
- **Enhanced sustainable livelihood.** Some farmers and even organizations went into organic fertilizer production after their training with SADEP. The Office of the Provincial Agriculturist (OPA) of Occidental Mindoro distributed organic fertilizers produced by OMSC and promoted through SADEP. Later, OPA started to produce and distribute its own organic fertilizer applying the technologies learned from OMSC.
- **Increased productivity and income.** There were reports that farmers were able to augment their farm income through backyard vegetable production and crop processing. There were also claims that productivity especially from onion and vegetable production had doubled with the adoption of organic farming technologies. The increased income can be attributed to lesser costs of production inputs.
- **Healthier, cleaner and greener communities.** Sanitation in the villages was improved as people have learned to dispose garbage properly. Farm animal manure, usually found scattered everywhere were utilized for organic fertilizer production. Many idle lands especially in the uplands were developed into integrated farms applying appropriate technologies especially the sloping agricultural land technologies.
- **Gained access to information and technology and other service institutions.** SADEP has opened doors for communities needing help. Number of individuals and groups coming to OMSC for information and technical assistance had increased significantly.
- **Forged partnerships among development organizations and agencies.** The Mangyans who used to be very aloof with outsiders had established cordial working relationship with OMSC. The Institution had successfully forged partnership with them in two extension programs-the SUDP and the PAPEL Buhid. SADEP also paved the way for other collaboration opportunities between OMSC and government and private agencies.

- **Enhanced decision-making capability.** Because the farm households are more informed on the socio-economic issues, their decision-making capability was enhanced, particularly in the management of their productive resources. Community involvement had also improved. Some IP families aspired to send their children to college, as indicated by the increased enrolment of IP students in the baccalaureate courses especially Agriculture.

Conclusions

- SADEP can be a very effective instrument in bringing development to the countryside. It has enabled the generation of sustainable livelihood among farming families. It has enhanced community awareness on environmental conservation and protection. It has rekindled aspirations of the people to attain better lives.
- SADEP has helped strengthen the Institution's working relationships with other public, private, and people's organizations. The collaborations that were formed through this program have not only reinforced the projects of SADEP, but have also opened many socio-economic opportunities for the communities.

Recommendations

- Most of the projects conducted in far-flung communities of the province have no mechanism to ensure their success. Partnership with the community and other local organizations must be institutionalized to help monitor, evaluate, and sustain the different extension projects.
- Strengthen existing linkages and invite other organizations with similar undertakings to improve delivery of services.
- Continuing capability building of communities especially in natural resource management and entrepreneurship is necessary.
- An impact study should be conducted to find out how much the projects had contributed in attaining quality of life in the rural communities.

References

- Axinn, George H. 1988. *Extension Approaches*. FAO. Rome.
- Bernardo, Fernando A. 1999. *Filling the Gaps between Research and Extension and other Research Management Problems*. College, Laguna, Philippines.
- Calderon, Jose F. and Expectación C. Gonzales. 1993. *Methods of Research and Thesis Writing*. National Book Store.
- Cardenas, Virginia R. 1996. *The Philosophy of Extension Work*. Paper presented during the Symposium Workshop on "The Role of Pahinungod Program in the Mission of the University" on October 2, 1996 at Bahay Kalinaw, UP Diliman, Quezon City.

The Sustainable Agricultural Development Extension Program (SADEP): Enhancing Health, Education, Livelihood and Protection (HELP) of the Environment in Occidental Mindoro, Philippines

Dar, William. 1997. State of Affairs of PCARRD Partnerships with National and International Research and Development Institutions. PCARRD and DOST.

Espaldon, et al. (eds.). 2000. Philippine Capacity, Enabling Communities: Philippine Case Studies in Retrospect. SEAMEO SEARCA, College, Laguna, Philippines.

General Appropriations Acts of the Philippines.

Lewis, Barbara C. 1992. Invisible Farmers. Women and Crisis in Agriculture: AID/OTR.

Lumbo, Susanita G. Conducting Extension Programs and Outreach Activities. Lecture delivered during the Training Workshop on Research and Proposal Presentation held at OMSC Murtha Campus, Murtha, San Jose, Occidental Mindoro on July 13-14, 2006.

Occidental Mindoro: A Province Endangered, A People Rising. 2000. Watershed Ideas on Environment and Society Volume IV 2000. Center for Environmental Concerns-Philippines.

Roling, Neils. 1988. Extension Science. Information Systems in Agricultural Development.

School-Based Solid Waste Management Initiative in the Philippines: Lessons and Experiences of the Toyota Auto Parts and Sta. Rosa City Partnership

Enrico U. Baula
Behavioral Sciences
De La Salle University-Manila
enrichko@hotmail.com

Abstract

Through the collaboration of multiple sectors, a four-year project on school-based solid waste management is initiated in the city of Sta. Rosa in Laguna. This paper synthesizes the experiences of the students, teachers, and school administrators during their solid waste management program development and implementation. Using document reviews, focus group discussions, and key informant interviews, the study's goal is to draw out the lessons learned and identify the best practices from the first batch of participating high schools. The program's success relies on the collaboration of both public and private sectors of the community. Within the school, the participation of the student body, faculty, and administration is critical in achieving an effective solid waste management program. It is essential for all stakeholders to be actively involved. This will ensure that the next batches of schools will achieve sustainability in their respective solid waste management programs.

Introduction

The Philippine government drew up a decree to further the environmental cause. On July 24, 2000, the Philippine Congress enacted RA 9003 or the Ecological Solid Waste Management Act. This Act provides for an ecological solid waste management program, creating the necessary institutional mechanisms and incentives, declaring certain acts prohibited and providing penalties, appropriating funds thereof, and for other purposes.” This Act mandated the Department of Education (DepEd), the Technical Education and Skills Development Authority (TESDA), the Commission on Higher Education (CHED), the Department of Environment and Natural Resources (DENR), and other concerned government agencies to “incorporate ecological solid waste management in the school system at all levels” (RA 9003, 2000).

This trend towards enlisting educational institutions had been taken up by private organizations after the National Solid Waste Management Commission (NSWMC) established a comprehensive approach in “Mainstreaming Ecological Solid Waste Management in the Philippine Educational System Project.” Through the implementation of the DENR, the project sought to enhance the capacity of students’ waste management through an Ecological Solid Waste Management Training Program. The NSWMC-Secretariat developed the Trainers’ Training Program not only to instruct

students but also to teach them how to train other students about solid waste management. The ultimate goal was to empower the students, teachers, and school administrators to create their own school-based solid waste management program (Ecological, n.d.).

From February 28 to March 1, 2007, TAP sponsored the Young Environmental Stewards (YES) Trainers' Training Workshop at Caleruega, Nasugbu, Batangas. The project's goal was to utilize the SBSWM approach for the improvement of the social and environmental welfare in Sta. Rosa City through multisectoral collaboration. It aimed to provide training for all 64 public and private high schools in the city and in the end, integrate SWM concepts, principles, and practices in the high school (year 1 to year 4) curriculum. The program will be completed in 2011.

The NSWMC provided TAP with the Ecological Solid Waste Management Handbook (Solid Waste Management Made Easy—A Do-It-Yourself Guide to Community-Based Ecological Solid Waste Management Programme) as the foundation for the training modules used in the Trainers' Training Workshop. Technical speakers for the training consisted of representatives from United Nations Development Programme (UNDP), DENR, Environmental Management Bureau (EMB), Community Based Ecological Solid Waste Management Council (CBESWMC), Laguna Lake Development Authority (LLDA), Save Silang Santa Rosa River (S3R2), and TAP. The lectures were on RA 9003, community-based ecological solid waste management, air and water quality management, and proposed ecological solid waste management modules for schools.

In order to motivate the pilot schools to participate in the SBSWM program, TAP organized a SBSWM Program Competition. For six months, TAP with consultants from the LGU, DENR, NSWMC, and S3R2 conducted a monthly monitoring and evaluation of the progress of the SBSWM programs. Substantial cash rewards, donated by TAP, were awarded to the top 3 school performers to aid in their future SBSWM endeavors. NSWMC provided the evaluation instrument for the competition.

As part of the SBSWM project, TAP also awarded a research grant to De La Salle University-Manila to conduct a study on the experiences of the pilot schools in their first year of SBSWM program implementation and development.

Rationale

The pilot project of the SBSWM covering 15 schools in Sta. Rosa, Laguna for SY 2007-2008 is already completed. When TAP conducted a training workshop on solid waste management for students, teachers, and school administrators, they made sure that inherent in the accomplishment of the project was the succeeding research and analysis of the experiences of its pilot implementation. The goal of this study was to draw out the lessons learned from the experiences of the first batch of selected high schools. Knowing what additional assistance the schools may need, how they can help the next batch of schools, what other activities they can recommend, and how they intend to make their SWM program sustainable are just some of the questions that were

addressed by this study. Results of this study would not only improve the existing SWM program of the schools but will also serve as guide to the succeeding batches of schools in creating their own sustainable SWM programs.

This study assessed the first year implementation of the SBSWM program in Sta. Rosa, Laguna. It looked into the experiences of the students, teachers, and school administrators in their SBSWM development. Specifically, the study aimed to: a) identify the perceptions of the different stakeholders on the SBSWM program; b) identify the roles of the stakeholders in the implementation of SBSWM program; c) analyze the issues and challenges encountered in the course of piloting and mainstreaming; and d) identify the SBSWM best practices that emerged in the school's programs.

Implementation Framework of the SBSWM Program

The process of analysis is represented in this SBSWMP model (see figure 1). The framework is composed of three main parts: a) inputs from the public and private sectors, b) participation of school stakeholders, and c) lessons learned for program enhancement.

The planning and implementation of the SBSWM program involved the participation of and investments from various private and public institutions. The involvement of these institutions made available the necessary political support, organizational structure and resources (human, material, and financial) needed to effect participation of the stakeholders in the schools. Inputs from these institutions included, among others: Toyota's coordination and funding of the Trainer's Training Program (representing the private sector input); the LGU's provision of technical assistance (representing the public sector input), and De La Salle University's generation of research papers on solid waste management (additional private sector input). These inputs facilitated the participation of the school stakeholders.

Central to the framework is the participation of the school stakeholders. The stakeholders' participation covers: a) their perceptions on the SBSWM program, b) the roles and activities they are engaged in, and c) the issues and challenges they encountered during program implementation.

Adapting specific roles and the creation of SWM activities are also affected by the issues and challenges encountered by the stakeholders. This shows how the stakeholders address the problems in the program development and how they adapt their roles and activities to improve their SBSWM program.

Lessons and strategies for improvement are drawn from the analysis of processes in the stakeholders' participation. Recommendations are fed back to the private and public institutions where policies can be modified, organizations restructured, and resources redistributed to create a more effective SWM program with a greater impact on change and sustainability.

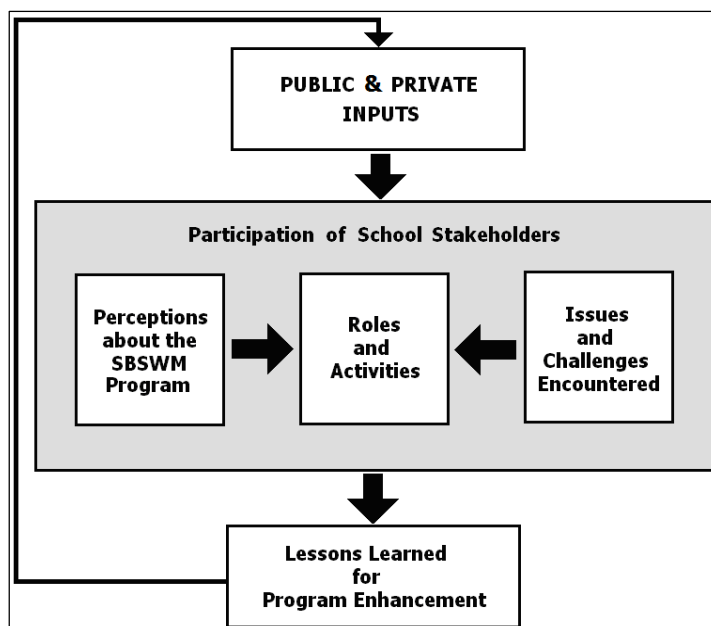


Figure 1. School-Based Solid Waste Management Program

Review of Literature

The primary cause of ecological degradation is the fact that there are too many people living in too unequal societies who are making use of too many unsustainable technologies and are consuming too many resources, which eventually produce too much waste. Sustainability may be brought about through smaller populations living in relatively equal societies, making use of appropriate green technologies, consuming responsibly, reusing waste, and producing less waste.

With the Earth's human inhabitants being the way they are, however, environmental deterioration continues to increase. The rapid depletion of natural resources is happening in all nations and significantly straining the quality of the planet's water, soil, and air. The pattern of production and consumption begs the question: can the Earth's natural resources feed and sustain a growing and increasingly urbanized population? It is estimated that the Earth's renewable natural resources has declined by over thirty percent over the last thirty years while the demands on them has increased by fifty percent (Strategies, 2001).

This environmental deterioration is made worse by the indiscriminate disposal of waste materials. Whenever something is thrown out or is considered to be waste, resources are lost. This called for the extraction of more natural resources to replenish our society's never ending need for more products. Inevitably, these new products are

used and eventually thrown away as waste and the cycle continues. As our waste piles up to infinity, the Earth's natural resources only become more noticeably finite.

There is a further and more direct consequence to the continual accumulation of waste. The figurative term "buried in garbage" manifested itself literally in the Payatas tragedy in Quezon City. Payatas is a 12-hectare dumpsite that is inhabited by around 311,500 people who make a living from scavenging and selling trash. Two typhoons that hit Metro Manila loosened the mountain of garbage and in the morning of July 10, 2000, it eventually came crashing down on an estimated 300 shanties, killing 224 people. The dumpsite was temporarily closed. Six months after the disaster, having no alternative dump sites, the Payatas dumpsite was reopened (Bildan, 2003).

Besides the threat to our lives, indiscriminate dumping has led to our streets being lined with trash and to the flooding of our urban dwellings. Our health is threatened when canals, clogged by garbage, become breeding grounds for insects that bring about diseases like cholera and dengue. Respiratory diseases are also brought about by the burning of garbage in our backyards. Landfills produce methane gas which is a potent greenhouse gas.

As the primary contributor to solid waste in the world, how can man and his man-made organizations contribute to the management of solid waste?

Ecological solid waste management as defined by RA 9003 is the systematic administration of activities which provide for segregation at source, segregated transportation, storage, transfer, processing, treatment, and disposal of solid waste and all other waste management activities which do not harm the environment. Part 6, Rule 21, Section 2 of RA 9003 states that the DepEd, TESDA, CHED, DENR, and other concerned government agencies, shall aggressively incorporate ecological solid waste management in the school systems at all levels, emphasizing the involvement of school administrators, teaching and non-teaching staff, and studentry in school-wide and nearby community waste management actions, and in strengthening of the waste management content in the curricula.

Due to the ever-increasing population, rapidly increasing urban setting, and the corresponding mountain of waste generated, it is a reality that local authorities lack the financial, technical and human resources to manage its own wastes. With such limitations they therefore become unable or unwilling to deliver and maintain this urban service. Faced with an overwhelming task, it is the practice of LGUs to seek assistance from non-government organizations (NGOs) and other public and private institutions in managing its solid waste. This collaborative approach also makes use of community involvement in waste segregation, storage, collection, and recycling.

Responding to the call for a more environmentally responsible nation, the LGUs, in cooperation with various institutions and NGOs throughout the Philippines, had engaged in solid waste management programs at the community level. A number of these activities focused on educating and training the Filipino youth about the proper solid waste management in their respective schools. By harnessing the idealism of the

youth, student leaders can influence their fellow students and parents to become catalyst for change not only in their schools but also in their communities.

SBSWM is being practiced in varying degrees in a number of schools throughout Metro Manila. Quezon City had launched the “Green School Brigade” program where students from six public elementary schools were encouraged to bring recyclable wastes and take them to their schools in exchange for school supplies or grocery items (Reganit, 2008). Marikina City instituted the “Eco Savers” program in 2004, requiring students from 18 public elementary schools to bring recyclable garbage from their households to their schools (Best Practices, 2007). Thirty-six schools in Makati City had also been chosen to engage in waste segregation (Recycling, 2008).

One hundred students from five partner schools were chosen as participants to the training program. The partner-schools include: Emilio Aguinaldo Integrated School, Isaac Lopez Integrated School, Bonifacio Javier National High School, Eulogio Rodriguez Vocational High School, and Rizal Experimental Pilot School for Cottage Industries. After the training, the schools’ waste management programs were monitored and evaluated for a period of six months, from August 2006 to April 2007. The LGUs in Bulacan, Nueva Vizcaya, and Sorsogon followed suit and had replicated the program. The program had also been implemented and privately financed by the Municipal government of Imus, Cavite, Samsung Electronics Philippines Manufacturing Corp. in Calamba, Laguna, and Toyota Autoparts Inc. in Sta. Rosa, Laguna (Aguinaldo, 2008).

Methodologies

The study utilized three qualitative methods to gather data from the sample schools:

Document Review. Published and unpublished materials were reviewed including newspaper and online articles on the program, journals, reports, and SBSWM competition results. Transcripts of the Focus Group Discussion (FGD) on the participants’ (from all 15 schools) perceptions and experiences in their 6-month SBSWM program development and competition were also reviewed. This also included the survey results on the participant’s evaluation of the activities, lectures, and lecturers on the designed Trainer’s Training program.

Key Informant (KI) Interviews. Face-to-face interviews with selected school’s teachers (2) and administrator (1) were conducted. The key informants were chosen based on their participation and involvement in the Trainer’s Training Program, SBSWM Program, SBSWM Competition and Evaluation. The information from the KIs was also used to validate dates, names, and other information from the document review. A digital recorder was used with the informant’s permission.

Respondents for the KI interviews were taken from the top seven school performers (out of 15 pilot schools) in the SBSWM competition. The top school performers in the first batch were chosen because they represented the best practices of SBSWM, and thus, it was assumed that they would be the best source of information particularly in terms of drawing out lessons and experiences in effective program implementation.

Focus Group Discussion (FGD). Participants of the FGD were also taken from the top seven school performers in the SBSWM competition. The teachers and the students who participated in the training program were asked to identify other students who were involved in the SBSWM program development, whether they participated as individuals or as a member of a science group/club, student government or an environmental organization. A maximum of 10 students were chosen for the FGD.

Results and Discussion

The data gathered from the top seven school performers showed that effective SBSWM involved certain conditional factors:

Effective school performers had more comprehensive SBSWM programs. Schools which engaged in SBSWM for a while managed to get their SWM initiatives to the “next level” or to weave a more comprehensive and logistically complex program. This could also be seen as a marker of how much the school’s SWM program has progressed through the years. Those ranked first and second were the only schools with their own fully functional MRFs. When standards and objectives were met, new standards were created and more complex objectives were set. Change was constant and necessary. It is not enough for the next batch of students to simply replicate the SWM initiatives set by their predecessors. It is their responsibility to learn from past experiences and make the necessary changes to improve upon their own SBSWM programs.

SBSWM in schools became more effective with multiple activities/initiatives. Schools ranked 5th and 6th had a smaller number of SWM initiatives. Schools ranked 1st through 4th had more than ten initiatives implemented in their schools. It is important to make use of varying and interesting initiatives. Multiple initiatives on SWM could cater to the interests of a wider audience. A heterogeneous group of students interested in SWM means a more participative student population.

SBSWM in schools became more effective with multiple participating student groups. More student organizations participating in the school’s SWM means a broad-based support for the program from the student population. The top two ranking schools had three or more student organizations involved in their school’s SWM while the lower ranked schools had only one.

Besides multiple initiatives, multiple student organizations involved in their school’s SWM is critical in an effective SBSWM program. Participation is the key. Creating a specialized student organization for SWM is not necessary; allowing already existing student groups to be involved in their school’s SWM makes for more participation composed of a heterogeneous population.

It was critical for the school's administration to fully support the SBSWM program. The data showed that full support from the school community was critical in achieving an effective SBSWM program. All the schools had full support from their school administration except the 7th ranked school.

The experience of School 7 in their SWM exemplifies a chain reaction of inaction. The very participative leaders of the student government and YES could not properly develop nor implement the school's SWM program on their own. The absence of a supportive faculty, a resource of leadership and role models greatly hindered their programs' development. This negatively impacted the students, the followers who could only get so far without proper guidance. The faculty could not be motivated to lead nor act because the school administration had given them no reason nor created a policy to do so. There was no policy in place requiring the faculty to neither promote nor support the school's SWM program.

Recommendations

SBSWM program should be institutionalized in the schools. Following up on schools with established SWM programs is important to maintain its sustainability. The longer SWM is practiced in a school, the higher is the chance that it will be institutionalized. As time passes and experience is gained, SBSWM evolves from an inconvenient activity to an instilled reality in the consciousness of the school community. The consistent monitoring and development of the school's SWM program can assure its sustainability. Perhaps, a secondary SBSWM competition can be implemented for the participating schools in the past. This competition will involve all previously-trained schools competing for the "Most Improved or Most Developed SBSWM program". This gives an incentive for the poor performing schools in the past to do better, and the top performing schools to further improve and sustain their SBSWM programs.

More technical assistance on SWM should be granted to future recipient schools. Results from the key informant interviews and FGDs show that there is a need for more SWM workshops or seminars. TAP and other public or private organizations can provide more resource speakers and more SWM workshops to the recipient schools after the training workshop. Though the Trainers' Training Workshop is much appreciated by all, follow-up workshops or seminars would be even more helpful. The program's effectiveness can be improved if resource speakers can go to the participating schools and give a talk to the larger student population. This, of course, is in support of the school's development of their own SBSWM program.

Additional inputs from private and public sectors should be granted to future recipient schools. Obtaining more technical assistance on SWM and organizing more SWM workshops have been heavily favored by the school community over acquiring financial support from outside organizations. These, however, do not negate the fact that financial support can be used to organize and enhance initiatives, specifically initiatives focused on information, education and communication of SBSWM. Besides providing additional workshops and technical support, these organizations can offer financial

incentives to schools who are encouraged to develop their SWM information campaign. At the very least, they can provide the materials and prizes in school competitions which promote SWM. Private sectors can enable schools to gain access to their resources such as multimedia devices and seminar halls or rooms. They can finance and facilitate school outings, camping trips, summer activities and immersions, which deal with environmental and SWM issues. At best, financial support can be used as incentives for schools to develop and improve on their SBSWM programs. For example, grants can be awarded to schools that can produce a paper or manual on their SBSWM program.

Participating schools should be grouped into categories in the future. Instead of randomly assigning schools in batches, an assessment of the school's prior experience in SWM shall be taken into consideration. Schools with little or no experience in SWM shall be grouped together and schools with existing SWM program/s shall be placed in another category. The performance of schools can be more effective if they are grouped with other schools with relatively the same level of knowledge and skill in SWM. Grouping can mitigate lesser performing schools from becoming demoralized when competing with better performing schools. More experienced schools in SWM are better challenged when similarly grouped. In the same way, training can be adjusted to suit the needs of schools from different categories. Instead of a generic workshop, trainings and workshops can be specific, taking into account the strength and weaknesses of the group.

More student leaders from different student organizations should be involved in the SBSWM program. School administrators, faculty, and students who were interviewed, recommended for the inclusion of more teachers and more students in future Training Workshops. Training more capable student leaders will gain more followers and train other students in SWM. TAP should recommend for the involvement of student leaders and/or members of different student organizations as participants to the training programs that may be conducted in other schools in the future. Having trained students coming from different school organizations allow for a wider base of influence. This can facilitate more participation from the student population.

The school administration should fully support the SBSWM program. The school's SWM program cannot be effective without the full support of its administration. How do we then motivate/require the school administration to support their school's SWM program? Looking back at the framework of the study, the impetus of the SBSWM program comes from initiatives of the public and private sectors. Local government agencies could involve themselves in the supervision of schools. They have the authority to mandate schools, specifically the schools' administration, to support the SBSWM program. If they wish to do so, they also have the authority to impose sanctions on schools that fail to be involved in SWM.

Acknowledgement

The author would like to thank the Toyota Autoparts Philippines not only for initiating the School-Based Solid Waste Management program in Sta. Rosa, Laguna, but also for sponsoring studies such as this to ensure the sustainability of the program. Immense gratitude is also extended to Dr. Ma. Elena Chiong-Javier for her patience, direction, and untiring support. This study would not also have been possible without the active cooperation and involvement of the pilot schools in the SBSWM program.

References

- Aguinaldo E. (2008). National and local initiatives on solid waste management and implementation of 3Rs in the Philippines. *ADB Urban Day Conference*. <http://www.adb.org/Documents/Events/2008/ADB-Urban-Day2008/presentation-Solid-Waste-Emy-Aguinaldo.pdf> (November 7, 2009).
- Best practices in local governance: Eco Savers, Marikina City. (2007). Galing Pook Foundation. http://www.galingpook.org/awardees/2007/2007_outstanding_marikina.htm (November 5, 2008).
- Bildan, L. (2003). *Disaster Management in Southeast Asia an Overview*. Asian Disaster Preparedness Center. www.redat.be/.../Regional/ADPC%20-%20Lolita%20Bildan%20-%20Disaster%20Management%20in%20Southeast%20Asia.pdf (January 20, 2008).
- Ecological solid waste management training module. *Mainstreaming Ecological Solid Waste Management in the Philippine Educational System Project*.
- Recycling on Christmas: Makati to launch “3B sa Pasko 2008” http://www.makati.gov.ph/portal/news/view_news.jsp?news_id=2075 (November 10, 2008).
- Reganit, C. (2008). *QC launches green school brigade*. Retrieved <http://balita.ph/2008/09/22/qc-launches-green-school-brigade-metro/> (November 5, 2008).
- Republic Act No. 9003, The Ecological Solid Waste Management Act 2000.
- Strategies for Sustainable Development. (2001). *The DAC Guidelines*. www.oecd.org/dataoecd/34/10/2669958.pdf (November 28, 2007).

School and Community Agro-Biodiversity Conservation Initiatives in Davao Del Norte, Philippines

Mario E. Corado

FAO IPM Training Specialist

mar_corado@yahoo.com

Marilou N. Runas

Provincial IPM Coordinator

Provincial Agriculture Office, Davao del Norte

marilourns210@gmail.com

Egmedio E. Samillano

Senior Agriculturist

Provincial Agriculture Office, Davao del Norte

megs_ipm@yahoo.com

Abstract

This paper highlights the lessons and experiences of the agro-biodiversity conservation project in the province of Davao del Norte, Philippines, which was implemented through the collaboration of the Food and Agriculture Organization Regional Program on Integrated Pest Management for Vegetables, and the Provincial Government of Davao del Norte, Thai Education Foundation, National IPM Program, Department of Education, and non-government organizations. The project commenced in September 2007 covering eight schools and four farmer's groups. It was formally turned over to the local government of Davao del Norte in April 2010.

Main project activities include capacity-building for local trainers, farmers, teachers, and school children in the conservation and sustainable utilization of agro-biodiversity and assessment of pesticide hazards to community health and environment through schools and Farmer's Field School (FFS). Conservation of local species of frogs, snail, catfish, eel, and indigenous forest trees were established and served as entry points for integrating biodiversity conservation and pesticides hazards concepts in schools' and FFS curricula. Supported by capacity-building activities, session guides, lesson plans, authentic portfolio assessment methods, and other learning materials were developed by teachers and extension workers who were directly involved in the project implementation.

Lessons learned from the project implementation are: a) indispensability of strong local government and civil society groups, b) integration of agro-biodiversity conservation and pesticides hazard concepts strengthens environmental education curriculum, c) agro-biodiversity conservation projects require at least two to three years or even longer period before tangible results are realized, and d) linking biodiversity conservation efforts to community livelihood activities will likely ensure sustained results and facilitate participation of rural communities.

Introduction

The Food and Agriculture Organization (FAO) Regional IPM Programme and the Thai Education Foundation supported the pilot implementation of Schools and Community Agro-Biodiversity Conservation and Assessment of Pesticide Hazards activities in selected elementary and high schools and FFS groups in Davao del Norte Philippines. These initial project activities were implemented in collaboration with the Provincial Government and the Department of Education (DepEd) and the Provincial Agriculturist Office (PAGRO) of Davao del Norte. The Provincial Davao government and the FAO under projects GCP/RAS/2009/NOR and GCP/RAS/229/SWE provided funding and technical support for the project for the period of September 2007 to April 2010.

The project generally aimed to build the capacity of local trainers, farmers, teachers, and school children in the conservation and sustainable utilization of agro-biodiversity and assessment of pesticide hazards to community health and environment through schools and Farmers' Field School (FFS) activities.

Agro-biodiversity projects such as conservation and sustainable utilization of local species of frogs, snail, catfish, and indigenous trees were established in participating schools and communities since its inception in September 2007. The conservation projects served as entry points for integrating biodiversity conservation and pesticides hazards concepts in schools' and FFS curricula.

Pesticides from commercial croplands, most notably aerial fungicide sprays on banana plantations adjacent to the project communities, continue to be a major threat not only to the conservation projects but also to the rural community stakeholders. These observations and concerns are also shared by many organic farmers in Davao del Norte. Hence, there is a need to address pesticide risk reduction by empowering communities and other stakeholders on the impacts of pesticides on human health and the environment and utilize survey results for advocacy. This can partly be done through the development of skills to monitor health and farming ecosystems.

The Participating Schools and Farmer's Field School Groups

The project was implemented in 12 selected sites in Davao del Norte (Fig. 1). The project covers eight schools (four elementary and four high schools) and four farmers' groups or FFS. Activities of the two FFS groups in Panabo municipality and IGACOS, were supported with local government funds.

A total of 620 students/pupils and 100 farmers from the 12 sites in Davao del Norte province participated in the Agro-biodiversity conservation and PIA activities during the first and second phases of project implementation. Table 1 provides a list of participating schools and farmer groups.

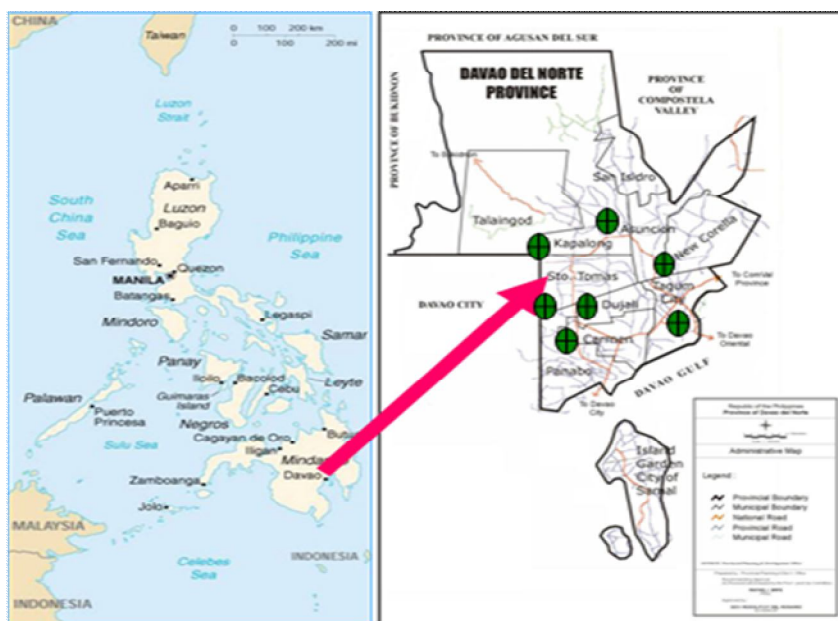


Figure1. Map of Davao del Norte and project sites.

Table 1. List of sites and number of participants in the agro-biodiversity conservation projects.

Site	No. of Participants					
	First Phase (Sept. '07- April '08)			Second Phase (Jul '08 – April '09)		
<u>Secondary Schools</u>	Grade Level	Students/Pupils	Farmers	Grade Level	Students/Pupils	Farmers
1. Asuncion NHS	3 rd Year	43		3 rd Year	45	
2. Dujali NHS	1 st Year	42		1 st Year	46	
3. Carmen NHS	1 st Year	35		1 st Year	25	
4. Sto. Tomas NHS	3 rd Year	55		3 rd Year	55	
<u>Elementary Schools</u>						
1. Concepcion ES	Grade 5	44		Grade 6	50	
2. Marcos P. Estoque ES	Grade 5	37		Grade 5	43	
3. Camiling ES	Grade 5	39		no activity		
4. Jesus Luman ES	Grade 5	33		Grade 5	28	
<u>FFS Group</u>						
1. Brgy. Pagsabangan, Tagum			28			Trainers worked with the same number of farmers during the subsequent crop seasons
2. Brgy. Masaoy, New Corella			33			
3. Brgy. Kiotoy, Panabo*			24			
4. Island Garden City of Samal*			25			
Total		328	100		292	

*Locally-funded activities

Capacity-Building Activities

As shown in Table 2, a series of capacity-building activities were conducted in the form of trainings and workshops. In addition, learning materials development served as one of the capacity-building activities. Materials such as lesson plans, session guides, and evaluation approaches were developed to support the integration of Agro-biodiversity and pesticide hazard concepts in core subjects of high school and elementary curricula. A draft Agro-biodiversity manual was prepared which includes learning competencies, learning objectives, suggested learning activities, lesson plans/session guides; performance-based tests (portfolio and rubrics), and scope and sequence chart.

Table 2. Capacity-building activities organized by the project.

Training/Workshop	Date, Location, Participants
Facilitators Training Course on Agro-Biodiversity Conservation and Assessment of Pesticide Hazards	24-26 September 2007; Provincial Cooperative Union (PCU), Tagum City
Planning Workshop and Portfolio Assessment	29 Nov to 01 Dec. '07; PCU, Tagum City, Davao del Norte
Training Materials Development Seminar/Workshop	16-18 January 2008; PCU Bldg., Tagum City,
Instructional Materials Development Meeting	15 Feb. '08, PAGRO Conference Room, DA, Tagum City
Feed back Meetings	4 and 18 April 2008, PAGRO Conference Room, DA, Tagum City
Planning and Evaluation Workshops	23-24 April 2008, IGACOS, Davao del Norte 30-31 July 2008 (Planning for 2 nd Phase), Tagum City 7-8 November 2008 (mid-season), Manaklay, Comval Province 21 and 22 April 2009, Tagum City
Technical Sessions with inputs on local snails, frogs, Basic Production Techniques for Raising Catfish, and Tree Nursery Management	21- 22 April 2009, Tagum City
Pesticide Hazards and Community Health Monitoring Trainings in cooperation with PAN AP and Local NGOs	24 - 25 April 2009, Tagum City 10-12 September 2009, Tagum City
Training Materials Development Workshop	28-30 December 2009, IGACOS
Pesticide Hazards and Community Health Monitoring Trainings in cooperation with PAN AP and Local NGOs	12-14 January 2010, IGACOS

Experiences in Establishing an Agro-biodiversity Conservation Project

Schools and farmer groups followed a process in deciding which species to select for their conservation project. These steps are briefly discussed in succeeding paragraphs:

Step 1. Meeting (Ground-working). The first step in the process is the conduct of a preliminary visit to the sites. Consultations are made with stakeholders as to the viability of implementing the project in their school/community. During the groundwork activity, a date is set inviting stakeholders to attend the formal introduction of the project.



Step 2. Briefing and formation of Agro-biodiversity Conservation Task Group (e.g., PTCA and Teachers, Farmers). Concepts of agro-biodiversity, agro-ecosystems, ecosystem services, and rationale for agro-conservation are discussed during this phase. Conservation task force is elected by stakeholders to ensure the continuity of the process.



Step 3. Mapping. Activities include identification of ecosystems in a local farm and visualization of the field data. The output is an inventory of the different ecosystems in the farm such as forest area, pond, crop areas, road sides, homestead, and so on.

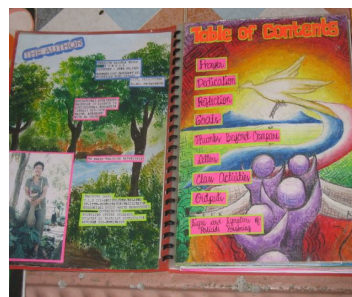
Step 4. Survey and collection of organisms in a farm ecosystem. This is the step where the survey and collection of organisms (flora and fauna) in different ecosystems in the farm are conducted. Species diversity changes over seasons. It is important for the group to collect data on different seasons of the year. The preliminary data is important as benchmark data that could be used for conducting impact evaluations.



Step 5. Analysis and summary. Organisms collected in different ecosystems are classified and species are ranked according to their ecological services. Threats to these organisms are identified and strategies to address these threats are incorporated in the biodiversity conservation plans.

Step 6. Develop a conservation and sustainable utilization plan. Once the species of interest is selected, the group develops the conservation plan specifying goals, expected results, activities, materials, persons responsible, and timetable. Strategies to address issues that are important in ensuring the success of the planned activity are discussed. Protocols for sustainable utilization of biodiversity species are also drawn and agreed upon by stakeholders.

Step 7. Implement the plan. After the comprehensive review of plan, the school/community establishes the conservation project.



Step 8. Document the entire process. The entire activity is documented in the form of periodic reports, portfolios, and school records.

Step 9. Share results. Experiences and outputs from the activities are shared in community meetings, congresses, field days, and other forums to generate support for conservation activities.

The Agro-biodiversity Conservation Projects in Davao del Norte

A list of agro-biodiversity conservation projects established in schools and FFS groups in different sites in Davao del Norte is presented in Table 3. These projects served as entry points for introducing innovative learning processes and developing a robust curriculum through discovery-based learning, environmental education, thematic teaching, and portfolio assessment. On the other hand, conservation and pesticide hazards assessment activities with farmer groups served as FFS follow-up activities and/or to enrich its farmers' education curriculum.

Table 3. List of agro-biodiversity conservation projects in Davao del Norte, Philippines.

Site	Biodiversity Conservation Project
<u>Secondary School</u>	
Asuncion National High School (NHS)	Revival of Native Species of Philippine <i>Hito</i> or walking catfish (<i>Clarias macrocephalus</i>) in rice-fish system
Dujali NHS	Conservation of endemic forest tree species (e.g. <i>Dracontomelon dao</i> , <i>Samanea saman</i> , <i>Pterocarpus indicus</i> , <i>Cassia fistula</i> L....)
Carmen NHS	Conservation of Indigenous Wetland Frogs (<i>Discoglossidae</i> family) and local Eel species (<i>Anguilidae</i> family)
Sto. Tomas NHS	Conservation of Indigenous <i>Hito</i> , walking catfish (<i>Clarias macrocephalus</i>) population as a component of “ <i>Gulayan sa Paaralan</i> ” (School Vegetable Production Program)
<u>Elementary School</u>	
Concepcion Elementary School (ES)	Conservation of endemic forest tree species (e.g. <i>Dracontomelon dao</i> , <i>Samanea saman</i> , <i>Pterocarpus indicus</i> , <i>Cassia fistula</i> L....)
Marcos P. Estoque ES	Conservation of endemic forest tree species (e.g. <i>Dracontomelon dao</i> , <i>Samanea saman</i> , <i>Pterocarpus indicus</i> , <i>Cassia fistula</i> L.)
Camiling ES	Conservation of endemic forest tree species (e.g. <i>Dracontomelon dao</i> , <i>Samanea saman</i> , <i>Pterocarpus indicus</i> , <i>Cassia fistula</i> L) as Habitat for Birds
Jesus Lumain ES	Conservation of paddy snail species, Asian Apple Snail (<i>Cipangopaludina chinensis</i>), Vivipariidae family, popularly known as “ <i>Iggi</i> ” in the local dialect.
<u>FFS Group</u>	
Brgy. Pagsabangan, Tagum	Conservation of Indigenous catfish (<i>Clarias macrocephalus</i>) population in paddy
Brgy. Mesaoy, Municipality of New Corella	Conservation of Common Philippine Frogs (<i>Discoglossidae</i> Family)

*Provincial Government and LGU funded activities.

Narra (*Pterocarpus indicus*) and mahogany (*Swietenia macrophylla*) were initially planted in schools with agro-forestry conservation projects. Seedlings were provided by the provincial office of the Department of Environment and Natural Resources (DENR). During the second phase of the project, other forest tree seeds were raised by the school children in their respective schools and were later planted in the school campus and other areas in the community. The endemic tree species include “malapapaya” (*Polyscias nodosa* Blume) Seem), “dao” (*Dracontomelon dao*), rain tree (*Samanea saman*), hog plum (*Prunus umbellata*), golden shower (*Cassia fistula* L.), smooth narra (*Pterocarpus indicus*), “kamagong” (*Disopyros discolor* Willd.), “ilang-ilang”, and “Lamio”.



Catfish (*Clarias macrocephalus*)



Eel species (*Anguillidae* family)



Wetland Frogs (*Discoglossidae* family)



Paddy snail *Vivipariidae* family

**Species under
Conservation in
Davao del Norte Province,
Philippines.**



Endemic Forest Tree Species

Assessing Pesticide Usage and Hazards to Community Health and Environment

Pesticides from aerial sprays in banana plantations were considered by stakeholders as the biggest threat to biodiversity conservation projects in Davao del Norte. Pesticides are not only harmful to farmers but also toxic to non-target organisms in the environment. Thus, exercises to determine the types of pesticides used by farmers, amount of pesticides applied in a given area/season/crop, storage and disposal practices, and spraying behavior were also included as integral component of the project implementation. Based on the data collected by the students and farmers, most farmers use class WHO II to IV pesticides. The farmers were not aware about the negative effects of the pesticides. The farmers also use minimal protective clothing when spraying the pesticides. It was also observed that there was an intensive use of pesticides in banana plantations that are adjacent to the schools or communities and farmers seemed not observant on the proper disposal of empty pesticide containers.

Stakeholders' Contributions in Sustaining Agro-Biodiversity Conservation Project

Strengthening collaboration among stakeholders is one of the important components of Agro-biodiversity conservation and assessment of pesticide hazards project. Strong collaboration was encouraged to generate local support and ensure project sustainability. These organizations or groups at the local level come from those who are either mandated or committed to the advocacy of educational reforms, biodiversity conservation, and environmental health. Local stakeholders' that provided contributions to the capacity-building activities and conservation projects include

Provincial Agriculturist Office of the Department of Agriculture (Crops and Fisheries Division, Department of Education, NGO (NOCHEM), Extension Office of DA-LGU, Parents Teacher Associations (PTAs), Farmer Cooperators, Provincial Environment and Natural Resources Office (PENRO), and Regional Facility Unit, Department of Agriculture, Region XI.

The Agro-Biodiversity project was chosen as the theme of the 14th Annual Provincial IPM Congress organized on 2 October 2008 by PAGRO and the municipality of New Corella as the host. In attendance were stakeholders' representatives, namely: LGUs officials and DA staff from the municipality of Carmen, Sto. Tomas, Asuncion, Talaingod, Dujali, Tagum and IGACOS City; NGOs (NOCHEM farmers associations, Talaingod Farmer's Cooperative Organization, NOCHEM, and TEAM-CARE Mindoro Occidental); IPM farmers; KASAKALIKASAN (The National IPM Program); FAO Philippines and FAO-ICP; the Department of Education; The Thai Education Foundation; and, IPM Coordinators from provinces of La Union, Tarlac, Aklan, Iloilo, Southern Leyte, and Mountain Province. PAGRO and its partners organize this yearly event to promote awareness, advocacy, and recognition of the milestones of Community IPM Program implementation in Davao del Norte province.

The project also participated in the 2009 Annual Provincial IPM Congress to highlight the project activities. Trainers from Thailand and Laos as well as Provincial IPM Officers from Region 12 shared experiences with trainers in Davao del Norte.

IPM Coordinators from other provinces were invited to observe Agro-BD conservation activities in different schools from 3-5 October 2008. The exposure trip was supported by the project to provide forum for possible scaling-up/replication of Agro-BD Conservation and Pesticide Hazards Assessment activities in other provinces of the Philippines.



Insights and Lessons Learned

The pilot implementation of the Agro-biodiversity Conservation and Pesticide Hazards Assessment Project in Davao del Norte from September 2007 to April 2010 provided the following important lessons and insights.

- ***Strong local government support ensures successful implementation of the project.*** The Provincial Government through its Provincial Agriculture Office has over the years developed and nurtured strong partnerships with DepED, LGUs, DA, PTCAs, farmers, and NGOs in the sustained implementation of its IPM program. The presence of such structure provided the necessary institutional support which

facilitated the implementation of a community development initiative like the Agro-biodiversity conservation and Pesticide Hazards Assessment project.

- ***Agro-biodiversity conservation and pesticides impact assessment strengthens environmental education curriculum.*** The main objective of the pilot implementation of the Agro-biodiversity Conservation and Pesticide Hazards Assessment Project is to strengthen the environment education that would be eventually integrated in the core subjects of the school's curriculum. With its experiential and discovery-based learning methodology, the project introduces teachers and facilitators to effective teaching and learning strategies.
- ***Agro-Biodiversity conservation projects require at least two to three years or even longer period before tangible results are realized.*** This is true in the case of the "hito" (catfish project) in three project sites. Setbacks were encountered when the projects were affected by floods in January 2009. Production of sufficient number of fingerlings enough for distribution to the community members was not realized.
- ***Linking biodiversity conservation efforts to community livelihood activities will likely ensure sustained results and facilitate participation of rural communities.*** The PTCA members in Concepcion Elementary School in Asuncion have included organic vegetable farming in forest conservation activities. Vegetables are grown between rows of trees allowing regular weeding and maintenance of the forest area. Farmers in New Corella are conducting studies on role of frogs in the management of rice stemborers.

Conclusion

The Agro-Biodiversity Conservation and Pesticides Hazards Assessment pilot project is an example of an educational reform that is made possible through the strong collaboration among stakeholders at the local level. The activities are grounded in discovery-based approach and experiential learning where the ultimate goal is to harness strong partnership between schools and community in strengthening environmental education. Conservation of local indigenous species and promoting on the harmful effects of pesticides are the entry points for achieving highly productive agriculture systems in rural communities.

Acknowledgment

The authors express their si appreciation is extended to the following:

- The Asian Rural Sociology Association (ARSA) organizing committee for allowing us to share our experiences from the pilot implementation of the agro-biodiversity conservation and pesticide impact assessment in Davao del Norte province, Philippines:

- Jan Willem Ketelaar, CTA of the FAO ICP for providing funding and technical backstopping support to the Agro-BD and PIA activities in Davao del Norte. The authors are also grateful for the comments and suggestions he provided in finalizing the report;
- Mr. Marut Jatiket, Executive Director, Thai Education foundation for the technical support;
- The Provincial Government of Davao del Norte, for the various assistance extended to the project;
- Mr. Dominador Encarnacion Jr, Provincial Agriculturist, Department of Agriculture, Davao del Norte, for providing logistic support to the project;
- Aurora B. Cubero (PhD), Superintendent, DepEd Division, Davao del Norte, for allowing teachers to participate in the schools and community biodiversity conservation initiative;
- Jessie S. Binamira, Coordinator, National IPM Program (KASAKALIKASAN), for the numerous technical assistance provided to the project;
- Messrs. Alberto Dumo and Rogelio Doñes, Education Specialists at central DepEd, for their inputs in facilitating integration of Agro-BD and PIA concepts in the school curriculum;
- The teachers, extension workers, and farmers from the project sites, for their hard work and cooperation;
- Susan Castro, Glenda Aquino, and Auralyn Barcarse, of the FAOR Office in Manila for efficiently providing project's logistic requirements.

References

- Alteri, M. A, 1999: The ecological role of biodiversity in agroecosystems. Department of Environmental Science, Policy and Management, University of California, USA
- Kemp, K. (no date). *The Importance of Farmland Biodiversity as "Natural Capital" for National Development*. Sustainable Agriculture for Environment Project. Thailand: Danida (unpublished).
- Macneil, J.D. 2003. *The Case of the Student Field Schools in Cambodia: A Pedagogical Reform for the 21st Century*. Boston, Massachusetts, USA: The Harvard Graduate School of Education.
- Reissig, W.H., E.A. Heinrichs, J.A. Litsinger, K. Moody, L. Fiedler, T.W. Mew, and A.T. Barrion. 1986. *Illustrated Guide to Integrated Pest Management in Rice in Tropical Asia*. Los Baños, Laguna, Philippines: International Rice Research Institute.

Self-Fashioning Towards “Apparent Achievement”: A Case of NPO in Mountainous Area in Japan

Satoshi Watanabe

Graduate School of Media and Governance
Keio University, Japan
watanave@sfc.keio.ac.jp

Abstract

This paper examines how a voluntary association in an agricultural village in contemporary Japan has fashioned itself in relations with local governments and local community. Through this research, we would explore contexts which voluntary association must take into consideration when it decides its action. By taking NPO-Takahara as an example, we argue that NPO-Takahara has come to put too much weight on showing “apparent achievement.” After five years of its establishment, NPO-Takahara has conducted various activities such as park improvement project for hikers, maintaining community forests and farming lands, and holding flower festivals or events for urban people. But in recent years, NPO-Takahara came to focus on maintaining community forests and concentrate most of its efforts on it. This shift has almost oppressed or ignored other needs and perspectives of the members. There are three contexts behind this shift which force the NPO to pursue “apparent achievement” even if costly consequences are emerging. First, NPO-Takahara needs to establish its legitimacy and procure trusts among residents in order to build relations with the local community. Second, it has to complete the project plans for funding, and establish accountability in order to build relations with the local government. Lastly, NPO-Takahara should establish its independence from the local government.

Keywords: NPO, depopulation and ageing, community forest, “apparent achievement”, partnership

Introduction

This paper is an attempt to examine how a voluntary association organized in an agricultural village in contemporary Japan has fashioned itself in its relations with local governments and local community. Through this research, we would explore contexts which voluntary association must take into consideration when it decides its action. Today, it is common to expect that voluntarily-organized associations or NPOs should play important role in order to solve local or public issues. Such is the case in the rural areas. These associations are counted on to address various problems that are being encountered by the contemporary agricultural villages such as declining local economy, depopulation and aging, lack of visions for agricultural development, deterioration of farming land, agricultural resources, and community forest.

This contemporary situation implies that when a volunteer association is launched in rural areas, there are already previous cases introduced in books or government reports which could serve as reference. At the same time, volunteer associations are soon surrounded by various expectations or distrusts of local governments and rural residents. Volunteer associations have to seriously take these expectations and distrusts into consideration and self-fashion in order to tap opportunities and resources for sustaining its activity, avoid troubles, and establish its legitimacy.

Based on ethnographic data collected during the fieldwork conducted from 2009 to 2010 in Takahara village, located in the west of Kanto area in Japan, we would examine a short history of a small volunteer association named NPO-Takahara. NPO-Takahara started and was registered in 2005, and its mission that is clearly written in its charter is to “revitalize” local community and improve environmental condition simultaneously in order to prevent depopulation in the village. After five years of its establishment, NPO-Takahara has conducted various activities such as park improvement project for hikers, maintaining community forests and farming lands, and holding flower festivals or events for urban people. But in recent years, NPO-Takahara focused on maintaining community forest and concentrated most of its efforts on this initiative.

Roughly speaking, we can point out three contexts why NPO-Takahara cannot avoid putting too much weight on demonstrating “apparent achievement” to local residents and the local governments. NPO-Takahara needed to establish its *raison d’être* and its legitimacy, and procure trusts among residents in Takahara village. In order to obtain subsidy from the government institution, it has to complete the project plans for funding and accountability. Lastly, it also needs to produce achievements that would enable it gain independence from the local government.

As a result of these three above contexts, NPO-Takahara puts emphasis on “apparent achievement.” Unfortunately, this self-fashion brings down costly consequences. This shift has almost oppressed or ignored various needs and perspectives. It is easily anticipated that this orientation forces members and residents to make a simplified decision, in other words, “take it or leave it.” In this situation, some cannot express their needs and perspectives, and the opportunities for the village have also been lost.

Background

NPO in Rural Area

It has been so long since the words such as “exhausted countryside” are on everyone’s lips. Since the 1960s a great number of rural Japanese villages have faced rapid depopulation and ageing. This phenomenon is called *kasō*. According to Nishida, there were 142,377 villages in Japan in 1980. The number decreased to 135,179 in 2000. The number of villages that have less than ten households has increased from 13,869 in 1980 to 29,955 in 2000 (Nishida 2006, p.27). *Kasō* started to become a conspicuous phenomenon in rural Japan during the postwar rapid economic growth period. Because of the widening income gap between the industrial sector in urban areas and the agricultural sector, a great number of farmers and their children--their potential inheritors--abandoned farming and moved to the cities.

Numerous researchers and fieldworkers have pointed out that one of the difficulties is how to find out effective actor who can tackle the problems related to depopulation and ageing. Local governments have been facing the demand to cut off budgets. Conventional community associations in village often lost their subsistence¹. In this context, it is understandable that many scholars and policy makers place their expectations on emerging new volunteer associations or non-profit organizations which are attempting to address various problems in villages.

There are already many researches on volunteer associations in rural areas. Some have explored how to construct successful partnership (*kyōdo*) between volunteer associations and local governments. Others examined how rural and urban residents can develop a collaborative relationship. Odagiri summarizes this tendency as expectation onto “governance including not only public sector but also NPO and volunteer (Odagiri 2006, p.225).” Based on this perspective, many case studies explored how to develop NPO or voluntary associations in rural Japan and examine conditions for promoting performances of NPO.

However, though much has been spent on clarifying “current status and problems” in cases, this attitude often evaluates cases only from the point of view of the members and/or researchers. As a result, this perspective does not capture various political and social contexts in which members of associations have to consider in decision-making. Of course, an NPO aims to achieve its purpose, on the one hand. But, on the other hand, the purpose itself is also dependent on contexts in which the NPO has to navigate through. In the course of its navigation, the ideal itself changes explicitly or implicitly.

Research Method

In order to examine the above question, we need detailed data of a NPO, including history of its activities and voices of members. The author has conducted a one-year fieldwork in NPO-Takahara since 2009. He participated in its activities, attended at its meetings and sessions with local governments, and conducted interviews with all the core members and several residents in the village where the NPO is working.

There are three reasons why the author chose NPO-Takahara as his research site. First, NPO-Takahara has already a five-year history long enough for a researcher to collect data and information. Second, its activity is not particular compared to other voluntary associations in rural areas. Third, it is not always “successful” in the sense that NPO-Takahara, as other associations do, has to face a number of challenges. These include the insufficient understanding of the residents about NPO and its activities, shortage of members, and even withdrawals of members.

As regards to my descriptions of Takahara, the names of informants and geographic places have been changed. Second, we used several official and historical documents on Takahara, but we did not mention them here in order to maintain the anonymity of the village.

Brief Description of Takahara and NPO-Takahara

Takahara Village

Takahara village is located in Z Township at the west hinterland of Tokyo-Yokohama metropolis and surrounded by hills that are 300 meters high. It takes about two hours to get to the center of Tokyo by train and 20 minutes by car from the station. There are farming lands and community forests on the hillsides. In 1960s, many villagers have begun working in Tokyo, and depopulation and ageing have started. According to the statistics in 2005, the total population is 254 persons in 74 households, and the population over 65 years old is 64 persons (25%). In 1985, the total population was 306 persons and the population of persons over 65 years old was 43 (14%). We see that the number of people who are over 65 is expanding and the household size is also shrinking; the number of households in which the elderly is living alone is from 1 in 1985 to 10 in 2005.

Most of the households in Takahara are classified as “part-time farm households.” The men go to work outside the village and help with farming during the holidays, while women are engaged in farming. One of the major consequences of this change is the change in environment. Community forests where villagers used to procure firewood and food for livestock began to deteriorate and became disordered. Abandoned farming lands are also increasing (see Figure 1 and Figure 2).



Figure 1. Takahara village in 1944. This photo was taken by Imperial Japanese Army and is in the possession of an informant.



Figure 2. Takahara village in 2006. Cited in Google Earth (<http://earth.google.co.jp/>).

NPO-Takahara

Three persons (two residents, and a man who had a leisure home in the village) began to argue how to prevent these population and environmental changes. Although they were not able to find out “specific solution,” they thought various activities were needed. In 2005, NPO-Takahara was registered as an authorized NPO. Its mission is to organize activities that are aimed at revitalizing the community in the mountainous areas.

At the start, the NPO declared to implement various activities that are geared towards environmental improvement. These include: a) flower production (e.g. field mustard, buckwheat and sunflower) on the abandoned farming lands, with permission from the owners; b) building and maintenance of parks and rest stations for hikers; c) development of proposals on environmental preservation for local governments; d) patrolling in the villages to reduce illegally-dumped wastes in farmlands and forests; e) holding of events that would promote environmental consciousness among the urban people by providing opportunities to the urban people to get an experience in agriculture; and, f) conducting researches on environment and human resources development in the village.

The above list of NPO-Takahara activities may only show that this organization embraced the so-called “post-productionism (Tachikawa 2005, p.18)”. According to Tachikawa, a rural sociologist, post-productionism is an ideology which evaluates, constructs and consumes agricultural village not in terms of productivity but in terms of the environment, landscape, tourism, healing (*iyashi*), and security. This mind-set has influenced policy and activity in agriculture since the era of economic development ended.

It is, however, a fact that many activities of NPO-Takahara have opened the door to the residents to contribute something for the village. For example, some have expressed to hold large events for hikers, while others wanted to exchange knowledge and skills among generations. It was obvious that these needs could not be fulfilled in conventional organizations in Takahara village.

There were about 40 persons who have registered in the NPO in 2009. Most of them are residents in Takahara. However, only 10 have actually been participating in the activities that are held two days each month. These “core members” are all male and are over 50 years old. Obviously, the NPO is struggling to expand its membership. Around these three years, there were even a few core members who declared to exit the NPO.

Until 2007, the NPO did various things written in their charter. They cultivated abandoned farming lands, built parks for hikers and hold events for drawing in hikers to village. In 2008, however, it began to concentrate on improving and maintaining community forest. It started working in the community forests with steep slopes. Since then, the NPO has cleaned up and maintained about 3-ha of forests annually. Currently, it maintains 6-hectare forest area. In addition, it started to work in another 3-ha area in 2010. The members usually work in the community forests, except during the times

when they have to prepare for annual events for hikers. The works in the community forests are very tedious, and members have to use heavy chainsaws and bush cutters on steep slope (Figure 3). They are not specialists at all, indeed.



Figure. 3. Maintenance of the community forest (taken by the author)

This change can be summarized as “the shift towards apparent achievement.” The NPO began to pursue achievement which is appealing to the villagers in Takahara and the local government of Z Township. In the next section, we see three contexts behind this shift, and we would explore costly consequences of this shift in the fifth section.

Three Contexts of the Shift

Local Community

The man, Mr. A, in his mid-60s, who was given an orientation about NPO-Takahara, mentioned that the main context of the shift was to pursue “apparent achievement”. The number of members has not expanded as he hoped. When the members started the NPO, they expected that it would grow as a large movement in which most of the villagers would participate and take action. But in fact it did not.

Mr. A enumerated three obstacles that he thought were hindering the expansion of membership of NPO-Takahara. First, he pointed out that there was a sort of “resignation.” According to Mr. A, *“some of the residents told me that the NPO is meaningless because we could no longer stop the deteriorating state of the village”. We could not improve the agriculture, and we could not stop ageing and depopulation.*” Second, Mr. A and other members had to face the question that they are not serious with their activities and that the NPO is merely a kind of pastime for the elderly. Third, Mr. A said that, *“there are still many people watching us with their shifty eyes.”* In fact, in the interview conducted by the author, a villager expressed his anxiety that if he rent his land to the NPO for cultivation, the NPO might finally get the land. As is often the case in Japanese rural areas, some of the villagers in Takahara say that *“entering farming land of the other people is the same as entering houses of other people without*

permission.”

Mr. A insisted that NPO-Takahara had to oppose “*the evidence that we can resist the tendency*” to the first obstacle, and “*the evidence to demonstrate their ‘seriousness’ and ‘honesty’*”. In this sense, maintaining community forests was the most suitable in demonstrating “apparent achievement.” We can see this clearly in the strategic choice of the place of community forests where NPO-Takahara began to maintain. In 2009, NPO-Takahara got permission for maintaining the forest of a hill from its owners. The top of that hill is a symbolic and divine place for the villagers because it is where the founder of the village was enshrined. Mr. A said, “*By cleaning up one of the most important areas in the village, we can show our ability. Some people may think we can do something for the village. Then, the NPO can do more things.*” NPO-Takahara is working in other community forests, as well.

Subsidy

The second context behind the shift to “apparent achievement” is the subsidy that NPO-Takahara is provided. When Mr. A thought that a large scale activity was needed, he found an official project for maintaining forests in mountainous area and soon introduced it to other members. The prefecture in which Takahara village and Z Township are located began implementing this project for the sake of providing subsidy to voluntary association that is working towards the improvement and maintenance of the forests in mountainous area. NPO-Takahara conceived this project in 2007 and was given 1,000,000yen in 2008, 700,000yen in 2009 and 800,000yen in 2010 mainly for machines and their fuels.

According to Mr. A, on the one hand, taking part in this project may help not only to prepare enough resources and tools for the activity, but also establishes the credibility of the NPO-Takahara among the villagers. On the other hand, however, this also poses a challenge for NPO-Takahara to prove to the local government that is worthy of their financial support. The NPO has to demonstrate its capacity to accomplish the annual plan, report and evaluate its progress, and interact with other similar associations.

The local government of Z Township

NPO-Takahara is eager to establish bargaining power with Z Township and become an equal partner. Z Township offers about 60,000yen a year as subsidy for the procurement of seeds of ornamentals that are being maintained by NPO-Takahara. In exchange of these subsidies, the Z Township required NPO-Takahara to provide its counterpart when the former is organizing festivals and related events. Among the counterparts expected of NPO-Takahara is the supply of flowers for use in the decoration during the events, and participation in the forest maintenance project.

The members of the NPO-Takahara perceived these demands of Z Township as unfair and unjust as these are not within their institutional arrangements. These circumstances enabled the NPO-Takahara to pursue the concept of “apparent achievement”.

Challenges in the NPO-Takahara’s Shift

As a result of these three contexts discussed above, NPO-Takahara has put emphasis on “apparent achievement.” Unfortunately, this self-fashioning towards a specialized association cannot avoid costly consequences. Foremost, the shift obviously functions to exclude women. Mrs. B in her 80s, a former member of the NPO, mentioned that she could not longer participate in the activity since the NPO began to work for community forest. *“It’s too hard for me,”* said Mrs. B, *“I wanted to contribute to the village, and I thought the NPO was so good when it was founded. I still think so, but I can no longer join. There is no place for me.”* Another member also complained that the recent activity is not favorable for women and new comers. He said, *“New comers could not recognize their roles. Most of us are not specialist, either, so we cannot instruct them precisely. Even if new comers come, they would not come back anymore.”*

Second, related to the first point, some members thought that they were also deprived of the many opportunities that they used to enjoy in the early beginnings of the NPO-Takahara. As discussed above, NPO-Takahara had a number of missions. Its diverse missions enabled the NPO to address the needs of the concerned individuals, which conventional organizations in the village such as neighborhood community association and agricultural producer association could not address. A man in his 50s said, *“I expected that I could share the agricultural skills and knowledge with other farmers through the activity. Nowadays, we have less communication especially with the other generations. I thought the NPO was a good place and, if my memory is correct, this was set as one of the purposes of the NPO. But it is completely forgotten. This tendency is not very good because we do not recognize the real needs.”*

Third, fixing one orientation of the NPO sometimes accelerates conflicts as members have varying perspectives and orientation. In 2009, a man in his 70s exited from the membership. He said, *“I think we should do more unique activities. I don’t think maintenance of community forests is appealing. I think, cultural activities and events are more appealing. But as long as the community forest project is going on, we do not have extra money and time for cultural activities.”* Fixing one orientation presses members to decide whether they take it or leave it. In this case, the difference of the orientation directly led to the withdrawal of other members.

Conclusion

This paper attempted to explore the three contexts which forced NPO-Takahara to pursue “apparent achievement.” We have to pay close attention not only how a NPO is facing difficulties for its purpose, but also how contexts are working when a NPO set its purpose and activity.

Among three contexts mentioned above, the third context might be especially worth focusing on. Z Township attempted to use NPO-Takahara as cheap workers to maintain forest park. Some sociologists pointed out that the discourse of “partnership between citizens and local governments” is often used to justify cost reduction of local

governments. This fusion between the discourse of civic society and new public management (NPM) works to force voluntary association to be economically independent in order to use its members as cheap subcontract workers (Harada, Fujii and Matsui 2010)ⁱⁱ. Opposing to this, a member of NPO-Takahara created another discourse: as long as the NPO works precisely and effectively, nobody can blame the fact that the NPO gets subsidy. This might show a possibility to find out a way out from the fusion of two discourses.

However, the shift was costly, indeed. NPO-Takahara still cannot find the answer to the question how to keep open to other needs and perspectives with the pressure towards “apparent achievement.” This paper is a small attempt to raise this question by a single case.

ⁱ The author explored the conflict occurred when a conventional agricultural association is on the verge of dissolution (Watanabe 2009).

ⁱⁱ It is also, however, worth paying attention to the fact that using voluntary association for effective governance is not necessarily new in Japanese modern history. Sheldon Garon argues that the modern state in Japan has always been eager to attempt to mobilize volunteers for its governance project (Garon 1997). The question how we situate today’s phenomenon into the history is still to be discussed (see also Schwartz and Pharr 2003).

References

- Garon, Sheldon. 1997. *Molding Japanese Minds: The State in Everyday Life*. Princeton: Princeton University Press.
- Harada, Kouki., Atsushi, Fujii. and Mariko, Matsui. 2010. *NPO Saikouchiku e no Michi: Patonashippu wo Sasaeru Shikumi (The Road to Reconstruct NPO: Systems for Supporting Partnership)*. Tokyo: Keisou Shobou.
- Nishida, Yoshiaki. 2006 “20seiki Nihon noson no henka to sono tokucho (Changes in Agricultural Villages and Their Characteristics in 20th Century Japan)”, Nishida, Yoshiaki. and Ann, Waswo, eds., *20seiki Nihon no Nomin to Noson (Agricultural Villages and Farmers in 20th Century Japan)*, Tokyo: University of Tokyo Press, pp. 3-29.
- Odagiri, Tokumi. 2006 “Chusankan Chiiki Saisei no Hout: Soukatsu to Tenbou (The Orientation towards Rebirth of Mountainous Area: General Overview and Vision)” in Odagiri, Tokumi., Mitsuyoshi, Ando. and Takuya, Hashiguchi. eds, *Chusankanchiiki no Kyosei Nougyou Shistem: Houkai to Saisei no Hurontia (Harmonious Agricultural Systems in Mountainous Area: Frontier between Breakup and Rebirth)*, Tokyo: Nourintoukei Kyokai. pp. 208-231.
- Shwartz, Frank, J. and Pharr, Susan, J. eds. 2003. *The State of Civil Society in Japan*. Cambridge: Cambridge University Press.
- Tachikawa, Masashi. 2005. “Posto Seisanshugi e no Ikou to Nouson ni taisuru “Manazashi” no Henyou (The Shift to Post-productionism and Changes in ‘gaze’ to Agricultural Villages).” *Nenpo Sonraku Shakai Kenkyu (Annual Journal of Rural Studies)*. vol. 41. pp.7-40.
- Watanabe, Satoshi. 2009. “The Ageing Community: Human Insecurity in a ‘Developed’ Society”, in Umegaki Michio, Lynn Thiesmeyer and Atsushi Watabe, eds. *Human Insecurity in East Asia*. New York: United Nations University Press. pp. 47-71.

Rural Revitalization Through Retirement Farming in Less-Favored Areas in Japan: The Case of Elderly Farmers in Shikoku, Japan

Nakamichi Hitomi

Ehime University, Faculty of Agriculture

Hitomi Nakamichi@agr.ehime-u.ac.jp

Abstract

In the less-favored areas of Japan, depopulation and aging are progressing. In regard to this period of population decline and aging, which is being experienced for the first time, this paper discusses historically the depopulation and aging of Japanese rural communities and considers “retirement farming” as one type of agriculture in dealing with this time of shrinking population and aging. I demonstrated with data how agriculture in Japan is being shouldered by the elderly today, and presented case studies of “retirement farming” in Shikoku, an area leading the nation in aging.

A study of Akehama-cho in Ehime Prefecture shows from the mikan production values of elderly farmers that they play an important role in supporting local agriculture. Next, the existence of substantial number of “retirement farmers” is shown, and a proposal is made for the creation of a universal design agriculture, in response to the needs of elderly farmers as shown in the survey. Case studies from Tokushima Prefecture show that “retirement farmers” are playing an important role in farm service businesses that support local agriculture and in the revitalization of agriculture in less-favored areas. In addition, the need for a system of financing and assistance when the need for nursing care arises are discussed.

Introduction

New policies were instituted in the rural communities of Japan at the end of the 20th century. In 1999, the New Food, Agricultural, and Rural Community Basic Law (New Basic Law) was established to guide rural community policies. The Fifth National Comprehensive Development Plan was put into effect in April 1998. One of the aims of these policies is the revitalization of rural society in Japan. This is because of the observed depopulation in the rural communities brought about by the postwar societal changes, and the desire for a “realization of a vigorous rural society”. In 2010, 268 cities and 508 towns and villages, a total of 776 municipalities or 44.9% of the municipalities in Japan are sparsely depopulated.

The latter half of the 20th century is characterized as a period of advanced modernization. The concept of modernization including the reconsideration of “excesses” has reached the different areas in Japan. A shift in the previous bases of existence of society was sought, from centralization of authority to decentralization, from giving precedence to culture (science and technology) to living in harmony with nature, from male-centeredness to coexistence with women in society, and from

workaholism to work-sharing. We must consider the creation of regional society in this new sense.

This paper highlights the “retirement farming,” a form of agriculture that has emerged in response to a time of aging and decreasing population. Looking at the depopulation and aging of Japanese rural communities historically, this appears to be unavoidable. Moreover, this paper will examine the data indicating that Japanese agriculture is currently being shouldered by the elderly. Different cases of the retirees that have engaged in farming in Shikoku are likewise emphasized in this paper. Shikoku is now in the forefront of aging within Japan.

The Current Status of Elderly People Engaged in Agriculture in Japan and Shikoku

Western Japan is leading in terms of the aging population. In order to understand the current status of elderly farmers in the outlying regions, let us look at current conditions in Shikoku, where aging is advanced. Table 1 shows the actual number by age group of farm household members less than 55 years old who are engaged in self-employed agriculture for market production. It is evident that both in Japan as a whole and in Shikoku, the number increased with age. Table 2 shows the actual number of household members 55 years old or above, by age category. These figures also make the aging of the population engaged in agriculture, with the number of persons in the 65-69-year-old category comparable to the number of 15 to 34-year-olds from Table 1. While the nationwide number of persons 60 years old or above comes to more than half (57.7%) of the total, in Shikoku the number is close to two-thirds (62.3%). Aging is most advanced in Ehime Prefecture, with 64.4%. Moreover, persons aged 75 years or older make up 12.6% of the total in Shikoku, indicating extreme aging.

Table 1. Numbers of persons under the age of 55 engaged in agriculture (Number of household members engaged in self-employed agriculture)—Producers for market.

Age	Total	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Japan	5,562,030	113,277	164,624	188,382	202,670	240,573	358,298	485,422	607,600
Shikoku	306,149	5,147	7,436	8,881	9,789	11,132	16,789	23,993	32,007
Tokushima	68,390	1,042	1,694	2,003	2,387	2,490	3,805	5,732	7,626
Kagawa	87,112	1,475	2,305	2,889	3,034	3,261	4,761	6,997	9,286
Ehime	95,733	1,718	2,164	2,448	2,635	3,432	5,121	7,023	9,599
Kochi	54,914	912	1,273	1,541	1,787	1,949	3,097	4,241	5,496

Source: 2005 World Agriculture and Forestry Census “Number of people engaged in agriculture according to age category — Producers for market —”

Table 2. Numbers of persons aged 55 or above engaged in agriculture (Number of household members engaged in self-employed agriculture)-Producers for market.

Age	55-59	60-64	65-69	70-74	75 or above
Japan	580,730	520,736	602,452	652,208	845,061
Shikoku	34,599	29,849	34,916	38,642	52,969
Tokushima	7,818	6,187	7,498	8,481	11,681
Kagawa	10,134	8,023	9,339	10,507	15,101
Ehime	10,613	9,956	11,681	12,412	16,926
Kochi	6,034	5,683	6,398	7,242	9,261

Source: Same as Table 1

Table 3 shows the actual number and percentage of persons 60 years old or above engaged mainly in self-employed agriculture for market production. The percentage of elderly farmers nationwide is 69.8%, making it clear that Japan's agriculture is supported by farmers 60 years old or above. Shikoku is higher than the country as a whole, at 72.4%. The figure for Ehime Prefecture, which showed a high rate of aging in Table 2, is 71.1%, and aging is seen as most advanced in Kagawa Prefecture, at 77.3%. In any case, the proportion held by household members aged 60 years old or above engaged mainly in self-employed agriculture for market production surpasses 70%, and for those 70 years old or above it is over 40%.

Table 3. Population engaged in agriculture (Among persons engaged in agriculture, the number of household members engaged mainly in self-employed agriculture) - Producers for market—

	Numbers				Ratio (%)			
	60-64	65-69	70-74	75 or over	60-64	65-69	70-74	75 or over
Japan	279,934	391,988	433,158	461,524	12.5	17.4	19.3	20.6
Shikoku	16,514	23,084	26,371	30,222	12.4	17.7	19.7	22.6
Tokushima	3,612	5,271	6,031	6,744	11.6	17.1	19.5	21.8
Kagawa	3,379	5,209	6,355	6,603	12.1	18.7	22.8	23.7
Ehime	5,975	8,307	9,257	10,855	12.4	17.2	19.1	22.4
Kochi	3,550	4,297	4,729	4,914	12.4	15.0	16.5	17.2

Source: Same as Table 1.

The Aging of Agriculture and “Retirement Farming”

The population problem is a matter of great concern in today's rural communities. Depopulation brings a crisis of continued existence to the traditional village and the people living in it. “From the Meiji period onwards, the traditional village was restricted and deprived of its functions in education, entertainment, religion, and self-government by the national government” (Yoneyama 1969, p. 201). In addition to a social reduction of population, a natural decrease can be seen, and a few people can also be seen moving into rural communities.

The elderly supports agriculture in Japan. In the background of this aging lies the Japanese industrial policy since the Meiji period of people moving from the countryside to the city. Because Japan's population was increasing from the Meiji period until recently, sufficient measures were not taken regarding the employment of the elderly, despite the fact that aging was a problem in agriculture and rural communities. Recently, however, Japan's population has dropped, and even in other industries, attention is turning to various measures for dealing with aging, such as delayed retirement.

The existence of people beginning to farm after retirement is said to be one of the causes of the aging of agriculture, but the actual situation of "retirement farming" is not well known. Here I would like to consider the status of these "retirement farmers," based on the research of Sawada Mamoru. According to Sawada (2003), "retirement farming" has become a representative form among the diversified routes to engage in agriculture. Sawada divides "retirement farming" into three categories: 1) a person living on the farm and working in another industry begins to work full-time in self-employed agriculture after retirement (full-time farming on retirement); 2) a person originally from a farm household who has moved to the city returns to the rural community on retirement (return to the rural community on retirement); and 3) a city resident moves to a rural community after retirement (entering agriculture on retirement). According to him, those engaged in full-time farming on retirement are the most numerous.

Based on estimates from the 1990 and 1995 censuses, during the intervening five years, the number of "retirement" farm households was 106,924, representing 3% of the total number of farm households in Japan. Although the area of land managed by "retirement" farm households was small in scale, the heads of the households, despite being over 60 years old, were expanding the scale of their operations by leasing land and growing crops on their own rental land. Regarding regional characteristics, "retirement" farm households were most numerous in the Tohoku region, and multi-generation households of 50-54-year-old "early retirement farmers" and 55-59-year-old "first-stage retirement farmers" were most numerous in Tohoku. On the other hand, the rate of switching from part-time farming with main income from another source was highest in western Japan, such as in the Sanyo area and Shikoku. "Second-stage retirement farmers," those in the 60-69 age brackets, also were most numerous in western Japan and were expanding their scale of management especially in hilly and mountainous areas. "Retirement farming" in hilly and mountainous areas is carried on by single generation households, which are a valuable source of additional labor in the area.

Positions Held in Regional Agriculture by Elderly and "Retirement Farmers" in Shikoku Island

Here I would like to give an overview of the position of Shikoku's agriculture within Japanese agriculture as a whole. The total number of farm households in Shikoku is 174,202, or 6.2% of the national total. Of these, 113,728 (5.8% of the national total) are market producers, and the number of key persons engaged in farming is 133,680 (6.0%), thus accounting for about 6% of Japanese agriculture. The total area of arable

land under management is 110.774ha (3.1%), and of this, the area managed by market producer households is 99.668ha (2.9%). This is about 3% of a national total of arable land that includes large-scale operations in Hokkaido. The gross agricultural output is 416 billion yen, 4.7% of the national gross agricultural output.

Thus, it may appear that Shikoku's position in Japanese agriculture as a whole is slight, but in regard to individual products, not a few, such as the mandarin oranges (*mikan*) of Ehime and the lotus root and carrots of Tokushima, have developed leading production areas, even within the country as a whole. In other words, Shikoku's gross agricultural output is only about 5% of the national, but it is evolving into a leading area of production for many agricultural products.

The Position of “Retirement Farmers” Producing *Mikan* in Ehime Prefecture

The Current Status of Elderly Farmers in Akehama-cho, Seiyō City

Akehama-cho in Ehime Prefecture is a small *mikan*-producing and fishing community on the west coast of Shikoku. *Mikan* are produced on terraced fields on steep hillsides facing the sea. In 2005, the population was 4,182, with a total of 1,656 households. The aging of the community is progressing. The total number of farm households was 398, 340 of which were producers for market. Full-time farm households numbered 177, and part-time households were 104. Most households produced *mikan*. The total area of arable land under management by market producers was 442 ha, and of these, the orchards of 331 market fruit producers made up 434 ha. Most households have landholdings of 0.5-1 ha, with the average size of 1.3 ha per household, indicating a very small scale. In conjunction with the aging of the population, much arable land is being abandoned.

Table 4 shows the number of farm household members and key persons engaged mainly in self-employed agriculture by age category from the age of 15. The lower the age, the fewer household members there are, with the number of household members under 40 roughly the same as those 75 years old or above. Considering only producers for market, household members 55 years old or above constituted about 60% of the total.

Table 4. Number of Farm Household Members and Key Persons Engaged in Agriculture in Akehama-cho by Age Category (Market producers).

Age		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75 or above
No. persons	Members	63	43	23	33	47	51	77	86	124	103	113	123	221
	Key persons	1	2	3	9	18	24	38	50	80	85	95	89	80
Ratio (%)	Members	5.4	4.0	2.0	2.8	4.0	4.4	6.6	7.4	10.6	8.8	9.7	10.6	19.0
	Key persons	0.2	0.3	0.5	1.6	3.1	4.2	6.6	8.7	13.9	14.9	16.6	15.5	13.9

Source: “ 2000 World Agriculture and Forestry Census ”

Looking at the numbers of key persons engaged mainly in self-employed agriculture, we see that, as expected, they are aging, with those 65 years old and over accounting for about 50% and those 60 years old and over for about 60%. *Mikan* production in Akehama-cho is maintained by the elderly.

The position of elderly farmers in Akehama-cho mikan production

Because of sluggish prices for *mikan* in recent years, prices had not risen even in production off-years, and lower production has just led to lower production value in Akehama-cho. With the low production in recent years, the farm households' net income has also been greatly reduced. Under these circumstances, enthusiasm for *mikan* production has dropped. There is little hope of newcomers engaging in production, and the elderly as key persons are the mainstay of much of the orange-growing.

Table 5 investigates the production values of the elderly in *mikan* production in Akehama-cho.³⁾ However, investigating the actual agricultural production values the elderly and the land area in production by older farmers is very difficult because the value is determined by household. Therefore, I examined the *mikan* payments made to the agricultural cooperative bank accounts in the names of persons 65 years old or above and considered the total of these amounts to be the production value of the farm households of persons 65 years old or above. In this connection, in the *Nanyo* region (south of Ehime) from which this case study is taken, it is customary that when a child marries, the parents transfer management and move to a separate dwelling, and thus the amount deposited in the elderly person's account can be considered to be all their own production. Although there are cases in which a successor employed outside agriculture assists with production or in which an elderly person assists a successor (and the bank account is the successor's), the details could not be grasped fully even after interviews of each household, and thus all is considered the production of the elderly.

The gross output for *mikan* per household for the 2003 fiscal year was approximately 1,119,000 yen. Considering that for full-time farm households there is no other agricultural income than this and that production expenses must be subtracted from it, it is clear that securing living expenses is impossible and that there is little hope of new farmers coming in. The proportion of elderly farmers 65 years old or above is over 50% in all but the Tonoe district. In production value, the households of farmers of 65 years old or above account for 156 million yen, or more than one-thirds of the total. In some districts, production by households of elderly farmers may account for more than half of the total production value. If we look at the production values for individual elderly farm households, we find that the average is 880,000 yen or 74% of the average for all households. In some districts, we can find that households of elderly farmers are higher than or about the same as the average.

Table 5. Production value of farm households of persons 65 years old or above in *mikan* production in Akehama-cho (Fiscal 2003)

Branch code	Total farm households	Total production value (Yen)		Production value per farm household (Yen)	Part-time to full-time				
				Total production value (Yen)	Farm households	Ratio of farm households (%)	Production value per household (Yen)	Ratio in district (%)	
Tawarazu	150	218,920,099	1,459,467	81,457,396	77	51.3	1,057,888	37.2	6
Tonoe	39	62,729,527	1,608,449	15,868,129	9	23.1	1,763,125	25.3	2
Karihama	47	36,828,759	783,590	15,712,139	24	51.1	654,672	42.7	5
Takayama	51	44,679,454	876,067	16,916,207	27	52.9	626,526	37.9	1
Miyanoura	41	44,732,608	1,091,039	13,702,919	22	53.7	622,860	30.6	3
Tanohama	34	23,578,580	693,487	12,420,087	18	52.9	690,005	52.7	0
Total	362	431,469,027	1,191,903	156,076,877	177	48.9	881,790	36.2	17

Source: Collected from the Akehama Branch of the Higashi Uwa Agricultural Cooperative and processed by author.

In summary, we can see that *mikan* production in Akehama-cho is highly dependent on the households of farmers 65 years old or above and that these farmers are also extremely important in terms of money.

It is unclear how many of the households of farmers 65 years old or above will still be farming in the next ten years. *Mikan* production is the community's key industry, and at present, the elderly farmers are necessary, as they play an important role in supporting the industry. Amid the increasing abandonment of arable land, the continuing production by these elderly farmers can maintain the *mikan* production environment. In Akehama-cho, structural improvement funds have been used to install orchard sprinklers, but repayment and maintenance expenses put pressure on farm household budgets. On the other hand, the introduction of sprinklers has made it possible for the elderly to continue farming and meet the conditions required to conclude a local agreement for receipt of "direct payment" income supplements from the national government. Most communities use direct payment funds for repayment and maintenance fees. With the low price of *mikan* and the difficulty to meet the expenses of repayment and maintenance for sprinklers, direct payments are an important source of funds to sustain the production possible. For the conclusion of the local agreements and for the preservation of the production environment, elderly farmers are indispensable.

In another sense, however, the sprinklers are a hindrance to *mikan* production. Farm groups that engaged in agricultural production without the use of agricultural chemicals, such as Muchacha-en, are forced to contribute to repayment and maintenance of unnecessary equipment. In addition, harvesting on the steep slopes is strenuous labor, and money could better be spent improving roads within the orchards, but given the

current low income from *mikan* production, farm households were not enthusiastic for investment. Although a few farm households built roads on their own when they had surplus labor, progressive aging will surely lead to the disintegration of *mikan* production in this area. This, in turn, means the disintegration of the area itself, which is based on *mikan* production.

What is needed for the maintenance and development of mikan production in Akehama-cho

Table 5 indicates that of the *mikan*-producing households in Akehama-cho, 9.6% of the households of farmers 65 years old or above, or 4.7% of the total, have switched from part-time to full-time farmers at the retirement age. Akehama-cho as a whole is aging, and elderly farmers, in the sense that they support the community, are playing an important role. Thus, creating conditions that enable elderly farmers to continue producing *mikan* energetically is essential for sustaining not only agriculture but also the community. Because *mikan* production occupies most of the industry, it is easy for Akehama-cho to establish policies. Roads allowing automobiles into the orchards are needed, but because structural improvement funds have already been used for sprinklers, the necessary funds cannot be obtained. The low income from oranges has put pressure on local tax revenues, and the community is unable to function on its own. Nevertheless, enthusiastic farmers, including elderly farmers, are making a great contribution to the preservation of local agriculture, and at the very least, a continuation of direct payments is desirable. In addition, redevelopment of Akehama-cho's infrastructure to meet the needs of the aging society is necessary for successors as well, and development of universal design in agriculture appears likely.

The Position of "Retirement Farmers" in the Agriculture of Tokushima Prefecture

The current status of agricultural production in Tokushima Prefecture

In 2001, 47% of the vegetables and 34% of the fruit produced in Tokushima Prefecture were delivered to the Kyoto/Osaka/Kobe areas, indicating that Tokushima is an important production area for these cities. It is pursuing a policy of becoming a "horticultural land," and while encouraging farmers to produce field crops, it is also promoting "farm service" businesses providing supplementary labor to facilitate crop diversification and prevent the deterioration of paddy fields. Tokushima farm services number 181 in 2000, approximately 1% of the national total. However, in vegetables they reached 2.8%, fruit 2.0%, and other crops 1.6%. These increased in number by 41 during the previous five years, with rice businesses as the most numerous, followed by vegetables, fruit, and other crops.

The position of “retirement farmers” in the farm services of southern Tokushima Prefecture

Table 6 examines the farm service businesses of southern Tokushima, which is becoming established as a broccoli-producing area. Tokushima broccoli ranks 10th in the nation in area of cultivation and 8th in volume of production. Following the categories of Sawada introduced above, let us examine the proportions of “entry to farming from the outside” (entering agriculture on retirement) and “retired entry to farming” (full-time farming on retirement and return to the rural community in retirement).

In Kainan-cho, there are no people from farm household who began to farm after retirement, and all are “retirement farmers” from outside farm households. In the Farm Service they have undertaken 60% of the area in its custody, and just two farmers “from outside” have undertaken production of broccoli and green manure. Looking only at production of broccoli by the Kainan-cho Farm Service, half is being handled by these two.

In Kaifu-cho, half of the total land area of the Farm Service is taken cared by two “retirement farmers” from farm households, and are in charge of broccoli and green manure. Looking at Kaifu-cho as a whole, these two retirement farmers are responsible for one-third of the total land contracted for broccoli.

Table 6. Results of farm services under the administration of Kaifu, Tokushima Prefecture (Proportions of “ entry from outside ” and “ retired entry ”).

Classification	Kainan-cho						Kaifu-cho						Shishikui-cho					
	Total			Farm services			Total			Farm services			Total			Broccoli sub-committee		
	Members	Retired entry	Outside entry	Members	Retired entry	Outside entry	Members	Retired entry	Outside entry	Members	Retired entry	Outside entry	Members	Retired entry	Outside entry	Members	Retired entry	Outside entry
No. of operators	17	0	2	5	0	2	24	2	0	24	2	0	9	2	0	5	1	0
Ret. farmer (%)			11.8			40.0		8.3			8.3			22.2			20.0	
Area managed. (ha)	131.7		31.1	51.9		31.1	207.1	14.0		68.1	14.0		13.0	9.4		2.2	1.0	
Ret. farmer mgmt.ratio (%)			19.1			60.3		6.8			20.6			72.3			45.5	

Source: Data from Tokushima Prefecture Department of Agriculture, Forestry and Fisheries, Farm Management Section, revised by author.

Note: Retired entry and outside entry farmers have farmed in the last five years.

In Shishikui-cho, which is under the same jurisdiction, there are two retirement entry farmers who are in charge of more than 70% of the contracted land. One of them is also in charge of slightly less than half of the contracted land in the Shishiku Broccoli Sub-committee. In Shishikui-cho, the retirement entry farmers are in-charge of more than 40% of contracted land.

Looking at the total farm service businesses in the Kaifu jurisdiction, we find a total of six “retirement farmers,” four retirement entry farmers and two entrants from outside, who make up 12% of the total employees. The land area being maintained by the “retirement farmers,” in addition to the contracted lands that are farmed by the group, is more than 20%. Considering broccoli, of which Tokushima Prefecture is becoming a production region, slightly less than 70% is being produced by “retirement farmers.” Thus, the “retirement farmers” are leading the way in the introduction of the new crop and are playing an important role in the preservation of agricultural land in the area. Even regarding just the “retirement farmers” from farm households, they are responsible for slightly less than 30% of the farm service contracted land growing broccoli.

The position of “retirement farmers” in vegetable production in hilly and mountainous areas

A vegetable production region has been developed in the hilly and mountainous areas of Tokushima Prefecture. Table 7 shows the status of retirement farmers in the major vegetable and forestry products of this area. “Retirement farmers” account for 7-20% of the producers and 5-20% of the area, but in terms of the volume of sales, there is a wide range of 5%-75%. This indicates that they play a major role not only in preserving the agricultural land of the region but also the area as a production region. The total area in spinach production in Tokushima ranks 8th in the country, while the volume of harvest ranks 10th. The volume of harvest in eggplant ranks 8th in the country. Summer/autumn strawberries are a Tokushima original, taking advantage of the climate conditions in the hilly and mountainous areas for harvest between seasons, and at present there is little competition. Fresh shiitake mushrooms rank second on the Osaka market. Producing 75% of spinach, 63% of bed-grown shiitake, and 12% of strawberries, “retirement farmers” clearly hold an important place in maintaining Tokushima as a production region.

By playing a central role in production value of spinach and bed-grown shiitake, the “retirement farmers” make it financially possible for other small-scale farmers to continue production. As could be seen in the previously described broccoli farm service and in this example of spinach, bed-grown shiitake, and strawberry production, “retirement farmers” were active in introducing new crops.

Table 7. The status of “retirement farmers” in JA Awa Miyoshi (Fiscal 2003)

Product	Total number of growers	Number of “retirement farmers”	“Retirement farmer” ratio (%)	Total sales volume (1,000 yen)	“Ret. farmer” total sales volume (1,000 yen)		“Retirement farmer” ratio (%)	Total area (a)	“Retirement farmer” area (a)
Summer/autumn eggplant	105	7	6.7	189,084	9,750	5.2	750	35	4.7
Summer/autumn strawberries	28	2	7.1	134,398	15,500	11.5	530	42	7.9
Spinach	8	1	12.5	11,022	8,224	74.6	115	15	13.0
Bed-grown shiitake mushrooms	5	1	20.0	104,194	65,150	62.5	250,000	50,000	20.0

Source: Data obtained from JA Awa Miyoshi, revised by author.

Note 1: Regarding spinach, 7 farms are involved in hydroponic and/or soil production.

Note 2: The area of bed-grown shiitake mushrooms is shown as numbers of blocks.

Issues in Agriculture by Elderly Farmers

From the Shikoku case studies, we can see that the proportion of elderly farmers approaches 70% for people 60 years old or above and 40% for those 75 years old or above. When the Akehama-cho *mikan* growers were surveyed about policies needed to deal with aging, the most frequent response was “support for young people entering farming.” Next in frequency was support for “retirement farmers.” Related to this, from the “Other” category, was the opinion that “a system of agricultural land acquisition should be created (by amendment of the agricultural land law) to make it possible for retired people to farm on a small scale.” Opinions on measures to deal with aging in areas like Akehama-cho, include searching for ways to avoid the aging, and also suggest the need to recognize aging and build a system of agriculture that can be done by the elderly.

As this study suggests, the elderly farmers are essential for the continued existence of regional agriculture, not simply as supplementary workers but also as key persons engaged in agriculture in the region. As seen in *mikan* production, the production values of elderly farm households made up more than one-third of the production value of the area. In the Tokushima example, the elderly and “retirement farmers” play an important role in developing a vegetable production district and are necessary for its continuance. Moreover, the elderly and retirement farmers are also essential in agricultural work that ensures the continued existence of local agriculture, such as in the farm services.

Among the “retirement farmers” are those who have entered agriculture from the outside on retirement, but people from inside farm households who move from part-time to full-time farming on retirement are most numerous.

Because many of these “retirement farmers” have work experiences outside, when they take up farming they bring with them a willingness to invest in the work and actively seek out education in crops, technology, and so on. As for the support given to “retirement farmers” for acquiring technical skills, training at the prefecture-run agricultural school and detailed instruction from agricultural extension workers and JA

management instructors are indispensable. This three-in-one instruction system is most important. On this point, Sawada (2003) noted that “retirement farmers” are not necessarily all enthusiastic. With the addition of pension, many seemed to be content with subsistence farming. However, there are also many “retirement farmers” playing a major role in regional agriculture and measures must be made with them in mind.

As Sawada (2003) stated, the elderly have a strong interest in the management of their own health. In that sense, there is high interest in reduced use of chemicals and organic agriculture. In another area of Tokushima Prefecture, elderly “retirement farmers” introduced raised-bed strawberry cultivation using bumblebees to the area. Instruction in cultivation techniques that take health into account are especially in demand. There is strong interest in cultivation methods such as the aforementioned raised-bed cultivation. Reasonable financing for such facilities is necessary, but there is uncertainty related to age. The same can be said about the need for orchard road-building in *mikan* culture. If investments in production styles that suit the labor ability of the elderly are essential, it is also necessary to remove the anxiety of financing. For example, when financing a real estate purchase, it is necessary to take out an insurance policy in case the person under obligation should die. Perhaps something similar to this system could be introduced. By paying an insurance premium when receiving financing, if the person were unable to continue farming, repayment could still be made.

Even if an elderly person is healthy, the illness of a spouse might make farming impossible. This could occur in case of a younger farmer as well, but at present there is no nursing care leave system for farm households. For farmers to continue farming with peace of mind, if there were a system, something like the support payments for paddy fields, in which the farmer would take out insurance, and when nursing care became necessary, the cost of dispatching a farm helper was covered, elderly “retirement farmers” would be reassured and could participate in regional agriculture.

Would not an agriculture in which elderly farmers could continue farming with enthusiasm and peace of mind be desirable for all farmers? As we move toward an aging society, it is important to consider universal design even in agriculture.

Notes

- 1) Yoshihara Naoki, drawing on the thought of David Harvey and taking the standpoint of urban sociology, emphasizes the movement to postmodernity, which is referred to as an accumulation of flexibility, as a result of the crisis of modern over-production being unassimilable in the movement of time and space (Yoshihara, 1994, p. 195).
- 2) The view of a bipolar society of rural and urban communities has been criticized from other than the postmodern standpoint (for example, Nakamichi, 1989, 1996).
- 3) An agricultural corporation in Akehama-cho called Muchacha-en produces *mikan* without using agricultural chemicals. As they sell their products directly, rather than going through the agricultural cooperative, the Muchacha-en farm households are not reflected in Table 6. The Muchacha-en households are in Karihama district.

References

- Heckman, Susan. 1995. *Jenda to chi* (Gender and knowledge) Translated by Kawaii Toshiko et al., Tokyo: Omura Shoten.
- Hosoya Takashi. 1998. *Gendai to nihon noson shakaigaku* (The sociology of Japanese rural communities at present), Sendai: Tohoku Daigaku Shuppankai.
- Kokudocho keikaku chousei kyoku. 1998. *Zenkoku sogo kaihatsu keikaku: 21 seiki no kokudo no gurando dezain* (The national comprehensive development plan: A grand design for the national land in the 21st century), Tokyo: Okurasho Insatsukyoku.
- Nakamichi Hitomi. 1989. "Noka seikatsu henka to 'tohi kinko'" (Changes in life in rural communities and "the balance between city and country") *Soshioroji* (Sociology) Vol. 33 No. 3. pp 55-77.
- Nakamichi Hitomi. 1996 "Posutomodan no feminizumu kara noson shakai mondai o kangaeru" (Considering issues in rural society from the viewpoint of postmodern feminism) *Nogyo to keizai bessatsu: Heisei 7 nendo nogyo hakusho no tettei bunseki* (Agriculture and economics special issue: Detailed analysis of the fiscal 1995 agricultural white paper). Osaka: Fumin Kyokai. Pp170-176.
- Nakamichi Hitomi. 1998. "Nosanson ni okeru guriin tsurizumu no tenkai to sono imi" (The development of green tourism in rural communities and its significance) *Nenpo sonraku shakai kenkyu Sanson saisei: 21 seiki e no kadai to tenbo* (The rebirth of mountain communities: Problems and prospects for the 21st century) Nosangyoson Bunka Kyokai. pp127-153.
- Sawada Mamoru. 2003. "Teinen kino to shuno ruto no tayoka" ("Retirement farming" and diverse routes for entering farming) *Sogo kenkyu sosho* No. 47, Chuo Nogyo Sogo Kenkyu Senta.
- Yoneyama Toshinao. 1967. *Nihon no mura no hyakunen* (Japanese mura in the past 100 years) (NHK Bukusu) . Tokyo: Nippon Hoso Shuppan Kyokai. (1969) *Kaso shakai* (Depopulating societies) (NHK Bukusu) Nippon Hoso Kyokai.
- Yoshihara Naoki. 1994. *Toshi kukan no shakai riron* (Social theory of urban space).Tokyo: Tokyo Daigaku Shuppankai.

Cocoa-based Agroforestry in Southern Cameroon: Is it Real or Ideal?

Kenta Sakanashi

Graduate School of Agriculture, Kyoto University Japan
mokkosu81@gmail.com

Abstract

People in African rural areas are dependent on cash crops for money and their livelihood. Governments are also promoting cash crops to earn foreign currency. However, this dependence on cash crops has caused excessive deforestation. Consequently, some governments have established national parks and regulations on local people's activities to protect forests and wild animals. Under this situation, agroforestry has attracted attention over the years. Its goal is to promote agriculture while at the same time preserving the forests.

The paper highlights the experiences of the local people in employing agroforestry in their cacao production area in southern Cameroon. The practice of agroforestry in southern Cameroon was found by researchers as a sustainable production system compared to the other cacao producing countries.

In the southern part of the country, Cameroonians plant cacao near plantains or trees that offer shade since cacao is a shade-tolerant tree. Thus some plantain fields have become cacao fields after the plantains have been harvested. There are cacao fields which are also planted to plantains, bananas and other crops. The farmers can also continue to engage in cacao production for about 30-50 years until the trees could no longer produce and bear fruit. Agroforestry is being employed for the sustainable cacao production and forest conservation. This paper presents the hidden problem on the implementation of agroforestry particularly on labor problem.

Keywords: agroforestry, cacao production, labor problem, human activities in tropical rainforest, southern Cameroon

Introduction

Today, deforestation is recognized as a major challenge in most tropical areas. It is said that 5.8 ± 1.4 million hectares of humid tropical forest were lost each year between 1990 and 1997 (Achard, et al. 2002). Many researchers point out that timber extraction and agricultural expansion contribute to deforestation. Thus, governments in tropical areas and some international organizations are taking aggressive actions to address the problem. To help conserve the forest area, the establishment of national parks and regulations on local people's agriculture are being promoted. This trend gave rise to many conflicts between the policy and local people's livelihood.

On the other hand, forestry and the production of cash crops are very important for the economic development in many tropical areas. However, there seemed to be a problem on the encouragement or promotion of crop production and the conservation of tropical forests. Many studies and literature, however, suggest that the practice of agroforestry will help address this problem. Agroforestry is defined as “the combination of forest trees with crops, or with domestic animals, or both” (Combe 1982). It can also lead to the increase or sustainability of agricultural yields, while at the same time protecting forests. The cacao production in southern Cameroon has been pointed out as an ideal example (Sonwa, D.J., et al. 2001). This paper shows the gap between assumptions of researchers and the actual practice of local people through a case study of cacao production in southern Cameroon.

History of Agroforestry

The practice of agroforestry, the intimate combination of the cultivation of tree species and agricultural crops has been observed all over the world. It has been mainly practiced in tropical areas such as in South America, Asia and Africa. According to King (1987), agroforestry has been utilized as a system of land management. Colonial governments promoted the system to sustain the plantation of forests through land management (1). Before the 1970s, this system did not focus on the agricultural outputs; instead the system was designed and implemented solely for forest industry (King 1987, pp.5).

During this time, forestry in tropical countries was important in order to earn money from abroad. Slash-and-burn agriculture, which is a common practice in forest areas, posed threat to forestry due to the destructive effects of fire (2).

Aware of this situation, Robert McNamara, the President of the World Bank from 1968 until 1981, emphasized the problem of rural poor people. Now, there is a general acceptance of agroforestry as a system of land management that is applicable both in the farm and in the forest" (King 1987). McNamara (1973) stated that,

The miracle of the Green Revolution may have arrived, but, for the most part, the poor farmer has not been able to participate in it. He cannot afford to pay for the irrigation, the pesticide, the fertiliser, or perhaps for the land itself, on which his title may be vulnerable and his tenancy uncertain (McNamara 1973, pp106).

The World Bank came to promote various social forestry programs in order to support agriculture and raise rural welfare. It was designed to assist small-scale farmers by increasing food production and to conserving the environment (King 1987).

FAO (Food and Agriculture Organization of the United Nations) also followed this trend as indicated by the theme of the past three World Forestry Congresses: 1966: "The role of forestry in the changing world economy", 1972: "Forests and socio-economic development", 1978: "Forests for people" with a special session on "Forestry for Rural Communities"

In addition, IDRC (International Development Research Center) established a project for the identification of tropical forestry research priorities (3).

One of the most neglected areas of research has been small-scale forestry development and the improved use of forest products among rural communities of poor tropical countries. IDRC sponsored a workshop of African foresters from countries north and south of the Sahara which helped to define the needs and the scope of the essential research. IDRC is supporting an expanding series of forestry projects in Senegal, Niger, Mali and Ghana. Others are being formulated in Tunisia, Sudan and Nigeria. Particular attention is being given to the integration of forestry with agriculture and a year-long IDRC study of agriculture and silviculture is about to start in the humid tropics of West Africa. A project through which secondary forestry species in Latin America will be classified according to their useful rather than their botanical characteristics is being formulated (IDRC Annual Report 1973-74, pp.31).

The IDRC commissioned John Bene (4) to undertake a study to identify significant gaps in the world forestry research and training; assess the interdependence between forestry and agriculture in low-income tropical countries and propose research leading to the optimization of land use; formulate forestry research programs which promise to yield results of considerable economic and social impact on developing countries; recommend institutional arrangements to carry out such research effectively and expeditiously; and, prepare a plan of action to obtain international donor support (King 1987).

Based on earlier discussion, the interdependence of forestry and agriculture in tropical areas has indeed received much attention. John Bene's team concluded that it was important to combine production systems which integrate forestry, agriculture and/or animal husbandry in order to optimize tropical land use. They stated that (Bene 1977 et al.).

It is clear that the tremendous possibilities of production systems involving some combination of trees with agricultural crops are widely recognized, and that research aimed at developing the potential of such systems is planned or exists in a number of scattered areas. Equally evident is the inadequacy of the present effort to improve the lot of the tropical forest dweller by such means.

A new front can and should be opened in the war against hunger, inadequate shelter, and no radical change in their life style is required. This can best be accomplished by internationally financed council for research in agroforestry, to administer a comprehensive programme leading to better land use in the tropics.

This report recommended conducting research in agroforestry and establishing an internationally-financed organization that would deal with the agroforestry researches. From this, the International Council for Research in Agroforestry (ICRAF) was born in 1977. The ICRAF strongly influences the generation of knowledge and promotion of the science and practice of agroforestry. It promotes the study of agroforestry and publishes the journal of Agroforestry System every year. ICRAF aims to develop an interdisciplinary capacity and methodology to assess land-use system constraints and potentials of agroforestry to address such constraints; build-up a systematic knowledge on agroforestry technologies and develop methods on how to study them; and disseminate of sustainable land system (Lundgren, 1982).

Agroforestry can bring in some economic and ecological benefits. From an economic point of view, it was thought to contribute in solving the food crisis as well as the energy crisis. And from the ecological point of view, it helps improve the soil and microclimate which are favorable to crop production. For instance, cacao (*Theoboroma cacao*) has attracted attention in agroforestry (Combe, 1982). Today agroforestry is also recognized as a strategy for biodiversity conservation. In tropical areas, cacao production tends to be used for biodiversity conservation (Asare, 2006). However, in Ghana and Côte d'Ivoire, the two main countries of cacao production, for example, have lost their forests because of deforestation (4). On the other hand, cacao production in southern Cameroon is highly-evaluated for its biodiversity conservation (5). As an "ideal model", international aid agencies and chocolate companies assist many countries in tropical areas to promote cacao-based agroforestry, such as in southern Cameroon. Asare (2006) noted that:

Following the actions of GTZ and the Mars chocolate company to support the conservation of Tai park in Côte d'Ivoire, a "Sustainable Tree Crop Programme" (STCP) based in IITA, was launched in May 2000, with the support of USAID and the chocolate industries of Europe and America, to promote cocoa agroforests in West and Central Africa (Sonwa et al., 2003). In this new programme, the shaded cocoa agroforests of Southern Cameroon were seen as a sustainable model that can be promoted elsewhere in the sub region where cocoa cultivation is contributing to forest habitat destruction (Asare 2006 :p5-6).

Cacao production in southern Cameroon

Research area

The field research was conducted in several villages near Mintom, a mid-sized village in Dja et Lobo Prefecture of South Province, Cameroon.

According to Chujo (1989), the mean annual rainfall in this area is between 1600 mm and 1700 mm. The vegetation is mixed semi-deciduous and evergreen forests. There are two seasons - rainy and dry seasons. The local people say that the major dry-season is from mid-December to March, the minor rainy season is from April to June,

the minor dry-season is from July to August, and the major rainy season is from September to November.

Bantu farmers, Fang, Boulou, and Beti tribesmen inhabit the Southern Province. The Fang and the Baka hunter-gatherers, who live adjacent to the Fang's villages, also inhabit the research area. The area is located about 370 km from Yaoundé, the capital of Cameroon. The road is paved from Yaoundé to Sangmélina, the capital of Dja et Lobo Prefecture, but already rough from Sangmélina to the research area, where it is covered by rainforests. The Fang's villages are dotted along this road and are dotted some kilometers apart.

The population density of Dja et Lobo Prefecture is 8.64 persons per square kilometer, comparatively low for Cameroon (Cameroon statistical yearbook, 2000: 25). The distance between one village and the next is especially distant and the number of households (6) is small. The population of villages drastically decreases when many children leave their villages to go to school in the city from September to June. This field research was conducted in particular villages in the selected village in this prefecture.

The Economic Activities of the Fang

As it is difficult to clearly separate cash income from subsistence activities, this paper defines cash income and subsistence activities as economic activities.

Slash-and-Burn Agriculture

The Fang clear and burn forests during the major dry season. At the beginning of the minor rainy season, from April to May, they begin to plant crops such as cassava, plantain, maize, peanut, cocoyam and so on. They harvest maize and peanut from June to July, cassava from September to October and plantain from March to April on the following year. In addition, some households open up again new fields before the major rainy season, from July to August, so they can harvest crops all throughout the year. The Fang maintain fields at different growing stages. As these fields yield most of the food which they consume, slash-and-burn agriculture is one of the most important activities for them.

Cacao Production

There are three stages in cacao production. These include: (1) initial maintenance of the cacao field. (2) control of young cacao, and (3) harvesting of cacao. Before harvesting cacao, from July to August, the Fang weed the cacao field. In addition, they control the field by chasing off wild animals that damage the cacao. Harvesting can be classified into four major types: reaping, breaking, carrying fermented cacao to the house, and drying. Normally, it takes two to four weeks to finish the whole process.

The Fang go through this series of activities two or three times for each cacao field until December. They sell cacao to traders when they need money. Since the price of cacao gradually rises, some of them would wait until December, the peak season of cacao (7).

Hunting and Gathering

The Fang can hunt regardless of the season. There are two types of hunting, either trapping or by shotgun. Bennett (1898) describes that these traps used to be made from natural materials from the rainforest. Modern Fang, however, make traps with wire. Traps are placed near or around the fields of starch crops and deep in the forest. The former mainly have the purpose of preventing crop damaged by animals, and the latter is to obtain meat. They target small animals, such as the *C. monticola* and *Atherurus africanus*. Hunting by shotgun makes it possible to get a greater variety of animals than by trap. Thirteen of 38 households in the area have shotguns. The Fang believes that the Baka can get animals without fail because they are superior hunters. Thus, the Fang often ask the Baka to hunt with a shotgun when they need meat. The Fang have two ways of selling bush meat. One way is to directly sell animals without cooking them. They can sell them for about 1000 - 4000 CFA Francs depending on the species and weight. The other way is to sell cooked meat which has been cut up into small pieces for 100 - 200 CFA Francs per a piece (100 - 300g).

Gathering palm-wine is a common activity of the Fang in this area. To gather palm wine, they cut down oil palms (*Elaeis guineensis*) and dispose of the pinnate compound leaf. After one or two days, they attach a bucket to gather sap from the top of the trunk. The sap turns into palm-wine by natural fermentation after several days. The Fang can harvest 2 - 3L of wine per palm. This continues for 3 - 4 weeks and most of them gather it twice a day.

Cacao-Based Agroforestry System

Sustainability of the System

Cacao yield in Cameroon is stable, compared with Ghana and Côte d'Ivoire (FAO STAT), and it is produced by smallholders under heavy shade (Ruf and Zadi 1998). This is one reason why cacao-based agroforestry is ideal in southern Cameroon. In the research area, cacao is often planted near plantains with shade. Thus, some plantain fields become cacao fields after plantains have been harvested. In the field the Fang can not only harvest cacao and plantain but also avocado (*Persea americana*), citoron (*Citrus sp.*), and oil palm (*Elaeis guineensis*). The presence of older plantain shows that the fields used to be an agricultural area. When the Fang slash plantain fields, there are also a number of trees that are left in area. This case is reported in another area in Cameroon. Shikata (2007) reported that there are 115 varieties of trees in a 0.63-ha cacao plantation. The average is 84 species per 1ha (8). To some, agroforestry is defined as "the combination of forest trees with crops, or with domestic animals, or both". The Fang do not raise livestock in a cacao field but focus on hunting animals that often come to eat cacao and other crops. Thus, cacao fields in southern Cameroon that are linked

with agricultural field combine agriculture (the production of cash crops and foods) with forest conservation. This may be valued as an "ideal agroforestry". However this "ideal agroforestry" disguises some points of view of local people who have lived in the area for a long time.

Hidden Problems of Agroforestry

Many studies of cacao agroforestry have focused on the combination of agriculture with forestry. However they mainly overlooked three points, (1) promotes activities in the forest, (2) lack of labor, and (3) historical context.

Promotes Activities in the Forests, particularly hunting

Today the government is regulating hunting activity in forest areas as a result of excessive hunting. Redford (1992) refers to an "empty forest", drawing attention to there being hardly any animals in some bountiful forests. However, I argue that hunting is necessary to sustain cacao production. I researched how much bush meat the smallholder hunted from forests before and during the harvesting of cacao. These results indicate that bush meat is important during the harvesting of cacao, particularly during the "breaking stage of cacao". This is because a producer has to gather many people who live within the area to help him/her in order to finish the work within one day (9). As a consequence, the producer has to provide free meal, bush meat and local wine and whisky. The people could also buy local whisky and tobacco to give to cacao laborers as an incentive for cacao laborers in selling bush meat. Thus, bush meat provides direct and indirect supports to cacao production.

Labor Problem

The area allotted for cacao plantation depends on the area that was slashed-and-burned. About 59% of the Fang in the research area adopt some forms of farm labor which do not require financial resources. These include labor exchange, family labor and individual labor. As a result, most of the Fang make smaller fields for a more efficient maintenance of cacao plantation.

The slash-and-burn season signals the end of the harvesting and marketing of cacao. Geschiere (1995) referred to the season as the "Dead season" in which the Fang have to pay back loans and school expenses of their children. Many Baka also begin to slash-and-burn their fields during this time, and so the Fang could not rely on the Baka's labor. Thus the Fang could hardly find laborers to clear their fields. As a consequence, some of the Fang who still have shotguns concentrate on hunting to gain money and labor for slashing fields. A number of Fang also wanted to establish more cacao plantation with agricultural crops, thus, they need a bigger labor force and mechanical tools such as chainsaw. But most of them could not do because of shortage of money.

Their lifestyle also influences the cacao production. Many Fang have the experience of working in cities and nearby towns. So, in some cases, the cacao field is abandoned by the Fang. Thus, the cacao plantation becomes forested. When the Fang are faced

with economic crises and their parent's death, they would go back to the village to manager their cacao production and to inherit the fields.

It can be seen that the mobility of people and the low population density also create an influence on the so-called "ideal agoroforestry" in southern Cameroon. Southern Cameroon is characterized by having few migrants who came just to sell their labor (Losch 1995).

Land use

There are some cacao fields that are very far from villages, which are potential sites for the "ideal agroforestry". The cacao production is done in the forest areas. According to the interview with holder A (about 70 years-old), the field was an old village. This indicates that the field was made before the settlement policy on the main road in the 1950s. Holder A's father started the field and continued the production of cacao and main starch crops as his father felt the land was fertile. The field was used as a sanctuary from violence of the Maquis (10). Today it is also used as a hunting camp. Holder A has continued because of the productivity of the land even after their settlement. This historical view and people's passion for their fields are not appreciated in the discussion of agroforestry. Thus the "ideal agroforestry" in southern Cameroon has formed under the combination of historical events with people's experiences.

Conclusion

Agroforestry, which combines the production of forestry and agricultural crops, began to be recognized as a practice that would help reduce poverty in the tropical countries. Studies related to agroforestry do not only revolve around the ecological aspects, but also on the economic aspects well. Today non-timber forest products (NTFPs) and CO₂ absorption in tropical forests are evaluated because of the perceived contributions to forest conservation, and solution to the effects of greenhouse gases (Leakey and Simons 1998, Gockowski and Dury 1999). Cacao production in southern Cameroon has been evaluated as an "ideal cacao agroforestry". However, there are also some points that have been overlooked when promoting cacao agroforestry.

Firstly, cacao production is an extension of slash-and-burn agriculture, and does not pay much attention to agriculture in the discussion of agroforestry (Nair 1998). Recent studies regard the traditional agriculture (slash-and-burn agriculture) as a factor of forest destruction. On the other hand, agroforestry is an alternative land use management system which helps conserve forest resources. Ironically, however, the establishment of the cacao-based agroforestry makes use of slash-and-burn agriculture in land preparation. Thus, local people's common practice to produce food and cash crops for survival is labeled as "ideal".

Secondly, cacao-based agroforestry somehow promotes hunting, a non-agriculture activity in the forests, particularly during the harvesting season of cacao where labor force requirement is at its peak. Agroforestry has focused on forestry, agriculture and

sometimes domestic animals, as defined. However, it is important to consider the labor requirements of this practice.

Thirdly, it should not be overlooked that politics and economics of the past have influenced the labor problem in the research area and lead to a form of agroforestry (11). In addition, the Fang's lifestyle, including their experiences had created impact on the maintenance of the cacao plantation. Some have left/abandoned their cacao fields in search for income from the off-farm activities in the cities and nearby towns.

Is this the "ideal agroforestry" in southern Cameroon? "Ideal agroforestry" for local people does not exist. We do not simply idealize the system as magic bullet for poverty and deforestation but should look at one of local people's practice for their livelihood. We need to consider how agroforestry has been formed. This case study brings up a question to tropical agronomy which pursues the universality.

Notes

- (1) For example, according to King (1987), the British Empire used the "taungya" system that a Karen in Burma established to manage teak plantations. The system spread to other parts of colonial area in the British Empire, South Africa and India.
- (2) According to King (1987), four factors were supposed at that time. (1) The forest estate should be inviolable. (2) The threat to the forest estate came mainly from peasants, particularly those who practised shifting cultivation. (3) It would be advantageous to replace derelict or low-yielding natural forests with forest plantations. (4) The establishment of forest plantations was a costly business, especially because of their long gestation period, i.e., the long delays before returns were obtained from the initial investment. Thus many forestry administrations ordered to remove the farmer from the forest estate.
- (3) IDRC (The International Development Research Center) is a Crown corporation created by the Parliament of Canada in 1970. It is the world's first organization devoted to supporting research activities as defined by developing countries (IDRC 2010)
- (4) England (1993) shows that deforestation is caused by the expansion of cocoa cultivation in western Ghana. The shortage of forest has encouraged some farmers to encroach into some forest reserves. It is said that forest reserves have been destroyed to the extent of 50-70 % of total area. Ruf (1995) also points out deforestation in Côte d'Ivoire.
- (5) Rolim and Chiarello (2003) report that the Atlantic forests in Eastern Brazil, where cocoa agroforestry are credited for conserving biological diversity, are not only less diverse and less dense than secondary primary forests of the region but also their natural succession and gap dynamics are being severely impaired. In short the species richness in cacao agroforestry is richer than only the farming activities that produce food crops.
- (6) The minimum unit of production and consumption is for that of a household which consists of husband, wife and unmarried children.
- (7) In the area researched, in 2005, cacao was sold for 400 CFAF/kg in August, 450 CFAF/kg in September, 500 CFAF/kg in October, 560 CFAF/kg in November, and 620 CFAF/kg in

December. Smallholders often sell earlier than December for various reasons. 1 euro = 655.957 CFAF (Communauté Financière Africaine franc)

- (8) Ruf and Schoroth (2004) note that there are 37 species per 1ha in Côte d'Ivoire. Species in southern Cameroon are twice as many as in Côte d'Ivoire.
- (9) The purpose of finishing work on one day is to prevent the theft of cacao.
- (10) Maquis was an underground Union des Populations du Cameroun (UPC), the political party formed in 1948 of elements against government forces. The Maquis movement was menaced in Cameroon politics between 1956 and 1971. See Joseph (1977) for more information.
- (11) We should pay attention to the fact that it was from the beginning assumed that agroforestry may contribute to the social integration of these population from the social point of view (Combe 1982).

Reference

- Archard, F. et al. 2002. "Determination of Deforestation Rates of the World's Humid Tropical Forests." *Science*. Vol.297. 9August. pp. 999-1002.
- Asarea, R. 2006 "A review on cocoa agroforestry as a means for biodiversity conservation" Paper presented as World Cocoa Foundation Partnership Conference. Brussels.
- Bene, J.G. 1977. *Trees, food and people*. Ottawa: IDRC.
- Bennett, A.L. 1898. "Ethnographical Note on the Fang." *The Journal of the Anthropological Institute of Great Britain and Ireland* 29(2). pp. 66-98.
- Cameroon statistical yearbook, 2000. pp.25
- Chujo, H. 1989. "Tropical Rain Forests and the Annual Rainfall in South Cameroon, West Africa, *Journal of African Studies* 34. pp. 23-39. (in Japanese.)
- Combe, J. 1982. "Agroforestry Techniques in Tropical Countries: Potential and Limitations." *Agroforestry Systems*. Vol.1. pp. 13-27.
- England, P. 1993. "Forest Protection and the Rights of Cocoa Farmers in Western Ghana." *Journal of African Law*. Vol. 37. No. 2. pp. 164-176.
- FAO STAT <http://faostat.fao.org/default.aspx> (10 June, 2010).
- Geschiere, P. 1995. "Working Groups or Wage Labour? Cash-crops, Reciprocity and Money among the Maka of Southeastern Cameroon." *Development and Change* 26. pp.503-523.
- Gockowski, J.J. and S. Dury 1999. "The economics of cocoa-fruit agroforests in southern Cameroon. In Jiménez, F. and J. Beer (ed.) *Multi-strata Agroforestry Systems with Perennial Crops*. pp.239-241. Costa Rica: CATIE.
- IDRC Annual Report 1973-1974. <http://idl-bnc.idrc.ca/dspace/bitstream/123456789/37064/1/ar-ra1973-74.pdf> (8 June, 2010).

- IDRC. 2010. IDRC at 40 A Brief History. Canada. http://www.idrc.ca/uploads/user-S/12736077681History_book_ENG.pdf (8 June, 2010).
- Joseph, R.A. 1977. *Radical Nationalism in Cameroon: Social Origins of the U.P.C. Rebellion*. England: Oxford University Press.
- King, K.F.S. 1987. "The history of agroforestry." In Steppler, H.A. and P.K.R. Nair (ed.) *Agroforestry a decade of development*. Nairobi: ICRAF.
- Lundgren B. 1982. "Introduction." *Agroforestry Systems* 1. pp.3-6.
- Leakey, R.R.B. and A.J. Simons 1997. "The domestication and commercialization of indigenous trees in agroforestry for the alleviation of poverty." *Agroforestry Systems* 38. pp.165-176.
- Losch, B. 1995. "Cocoa Production in Cameroon: A Comparative Analysis with the Experience of Cote d' Ivoire. " In F.Ruf and P.S Siswoputranto (ed.) *Cocoa Cycles The Economics of Cocoa Supply*. pp. 161-178. England: Woodhead Publishing Ltd.
- McNamara, R.S. 1979. *One hundred countries, two billion people*. New York: Praeger.
- Nair, P.K.R. 1997. "Directions in tropical agroforestry research: past, present, and future. " *Agroforestry Systems* 38. pp.223-245.
- Redford, K.H. 1992. *The empty forest*. *Bioscience* 42 (6). pp.412-422.
- Rolim, S.G. and A.G. Chiarello. 2004. "Slow death of Atlantic forest trees in cocoa agroforestry in southern Brazil. " *Biodiversity and Conservation* 13. pp. 2679-2694.
- Ruf, F. 1995. *Booms et crises du cacao*. France: CIRA-SAR et KARTHALA.
- Ruf, F. and H. Zadi, 1998. "Cocoa: from deforestation to reforestation. " Paper from workshop on Shade Grown Cocoa held in Panama, 3/30-4/2, 1998. Smithsonian institution. Washington, D.C.
- Shikata, K. 2007. "Change and Continuity in the Introduction of Cacao Growing into the Shifting Cultivation System in the Tropical Rainforests of Southeastern Cameroon. " *Asian and African Area Studies*. 6 (2). pp. 257-278. (in Japanese.)
- Sonwa, D.J., et al. 2003. "The promotion of cocoa agroforest in West and Central Africa. Voluntary paper presented during the XII world Forestry Congress on Forests, Source of Life. Quebec city September 21 to 28, 2003. <http://www.fao.org/DOCREP/ARTICLE/WFC/XII/0478-B5.HTM> (10 June, 2010).
- Sonwa, D.J., et al. 2001. "The Role of Cocoa Agroforests in Rural and Community Forestry in Southern Cameroon." *Rural Development forestry Network*. 25g(i). pp. 1-10.

Historical Development, Present Situation and Prospects of Organic Farming: Examples from Japan and Bangladesh

Keiko Yoshino
Hosei University
yoshino@hosei.ac.jp

Abstract

This paper aims to examine expected roles of organic farming by analyzing historical developments and present situations in two countries under different economic conditions, Japan and Bangladesh.

In Japan, organic farming was re-evaluated when health problems caused by chemicals became known in the 1970's. The teikei system in which farmers share the harvest and risks with consumers was established. It has helped enlighten the consumers about the diversification of marketing channels. There are also other movements that aim to overcome the conflicting concept of "farmers vs. consumers" such as Ashigara-noh-no-kai's "Citizen Farmers". In Bangladesh, traditional farming was replaced by the Green Revolution, but arsenic contamination of drinking water allegedly caused by irrigation and agricultural chemicals is a great threat to the human health now. Various non-government organizations are trying to promote organic farming in rural areas to empower small/marginal farmers. UBINIG (Unnayan Bikalper Nitinirdharoni Gobeshona) stresses farmers' independence from modern capital and the reconstruction of rural communities, while other organizations emphasize value adding.

The organic farming movements have diverged into two groups. One group advocates for the reconsideration of wasteful lifestyle, and the other seeks to increase profits by value adding. The value-adding approach will remain the mainstream in the "consumer society", but where environmental sustainability is concerned, the reconsideration of lifestyle is indispensable. Re-evaluation of non-monetary values of organic farming and rural life, sovereignty and cooperation that exist in teikei, Noh-no-kai, and UBINIG will be crucial.

Introduction

Organic farming used to be the principal farming method before "modern agriculture" was introduced. After two World Wars, chemicals that were used as weapons were converted into fertilizers and pesticides for "peaceful" use. Rural people came to adopt "modern" technology in order to lessen workload while the societal base shifted from agriculture to manufacturing and services. Consequently, organic farming became marginal and regarded as old-fashioned and laborious technique with low productivity.

Among the industrialized countries, organic farming movements are generally categorized into two types: the "Euro-American type" and the "Japanese type" (Adachi 2009). The "Euro-American type" movement was initiated by farmers who wished to

restore the soil that was damaged by chemical fertilizers and pesticides before World War II. Later, organic certification was created to distinguish and add values to the products. The “Japanese type” movement was initiated by consumers fearing for the pesticides’ harmful effects, and evolved into autonomous and cooperative relationship between farmers and consumers called “*teikei*”. The penetration of agricultural modernization started in the 1960s in the “majority world”. Organic farming has regained its recognition as a protest against the environmental degradation and control by the global capitals, and also as its promising premium products mainly for export. Today, organic farming is spreading worldwide. It is reported that 35 million hectares of agricultural land are certified according to organic standards (FiBL and IFOAM 2010) covering 0.81% of the world’s agricultural land. The coverage rate is high in Oceania (2.76%) and Europe (1.72%), and it is low in Asia (0.23%) and Africa (0.09%).¹

Some criticize organic farming movement as a return to the exhausting workload, and doubt that organic farming cannot feed the world population. With regards to the latter argument, Badgley et al. (2007) studied past reports on yields of both organic and conventional farming, and found that the average yield of organic farming is 92.2% of conventional farming in “developed countries”, and 180.2% in the “global south”, Thus, concluding that the organic farming can feed the world.

Although organic farming is expanding, the number in area and population engaged in organic farming remains in the minority. This paper tries to examine expected roles and future prospects of organic farming from the lessons learned by reflecting the historical development and examining present situation of organic farming in two countries. These are Japan (representing the industrialized countries), and Bangladesh (representing the developing countries of the “majority world”).

Research Methodology

Research in Japan

- Web survey on consumers (2,000 respondents = 25% return) was undertaken to grasp their understanding about organic farming. This was conducted in November 2008 by the Japan Organic Agriculture Association (“Consumer survey” herein after)².
- Questionnaire surveys was administered to the *teikei* participants (198 respondent farmers (= 25% return) and 101 consumer groups (= 38% return)] to grasp the present situation, attainment and constraints of *teikei* activities. This was administered in November 2009 by the Japan Organic Agriculture Association (“*Teikei* survey” herein after).³

¹ These figures indicate certificated land coverage only, and the real coverage cultivated organically should be larger.

² Author also participated. For in detailed information, refer to JOAA, 2009

³ Author also participated. For in detailed information, refer to JOAA, 2010

- Questionnaire survey on *teikei* consumers (100 respondents = 81% return out of all customers)⁴, interviews with farmers and consumers, and participatory observation on *Ashigara-noh-no-kai*⁵ (*Noh-no-kai* herein after), an organic farming groups in Kanagawa prefecture next to Tokyo.

Research in Bangladesh

- Interviews with farmers and observation in Dakshin Chamuria village (Village D herein after), in Tangail district since 1992, were undertaken to document the historical changes in the farming system before and after the Green Revolution.
- Interviews with the headquarter staff, project staff, and core farmers of UBINIG (*Unnayan Bikalper Nitinirdharoni Gobeshona*, meaning Policy Research for Development Alternatives in English). The interview was undertaken at the Tangail regional center, one of the organizations promoting organic farming, in November, 2006.⁶

Historical development and present situation of organic farming in Japan

Historical development

Japan has 37 million km² lands, two-thirds of which is classified mountainous area. According to Agricultural Census, number of farm households used to keep over 5 million up to 1970. The farmer's⁷ population is 3.0 million, only 3% of total population in Japan as of 2005. Food sufficiency had fallen below 40%.

After World War II, sharecroppers obtained their own land as a result of the land reform, and they were vigorously engaged in agriculture to address the national food shortage. In the 1950s, Japanese economy started to improve rapidly. With the growth of urban population, the policy on selective cultivation of crops based on consumers' needs started under the Agricultural Basic Act in 1961. Based on this law, mechanization and use of chemicals were promoted, displacing traditional farming techniques. In the late 1960s, the negative effects of modern technology came to be known as evidenced by pollutions such as "*Minamata*". Various pollutions in food were also revealed, and citizens' movements for food safety arose.

In 1971, the Japan Organic Agriculture Association (JOAA) was founded in search of sustainable agriculture and desirable relationship between farmers and consumers. During the first phase of the movement, organic farming was treated as heterodoxy. There was a time when consumers requested organically-grown produce, which, even current organic farmers were astonished (Toya 1996). Organic products could not be

⁴ Survey was jointly conducted by author, Kim Kifan, and Shirato Yukiko.

⁵ Almost all farmers (five main *teikei* farmers, and other farmers at various involvement in farming) newly started farming.

⁶ Information on UBINIG is also shown in Yoshino (2008)

⁷ those are engaged in farming more than 60 days a year

fairly evaluated in the market economy, and direct sharing of harvest and risk between organic farmers and contracted consumers called “*teikei*” was elaborated. The main supporters of *teikei* were housewives, the main caretakers in families. Various social issues such as environmental pollutions, nuclear power plants were discussed in *teikei* activities, and developed into actual movements. Harayama (2009) analyzed that such expansion into various social movements was attributed to the orientation toward independence and autonomy from the government and capital, which early organic farming movement had.

Organic production increased drastically in the late 1980s mainly seeking for added value. Marketing channel has also diversified involving various intermediate merchants. The production process became invisible, and confusion and distrust in “organic products” spread. In 2000, the government set the standards for “organic products” in compliance with the Japanese Agricultural Standard⁸, in order to claim that the products are organic; certification from the certification bodies registered by the government has to be obtained. In 2006, a law on organic farming was passed to encourage national and local authorities to promote organic farming was passed in order to establish sustainable agriculture and to respond to consumers’ needs for safe and high quality food.

Present situation of organic farming

Organic farmers

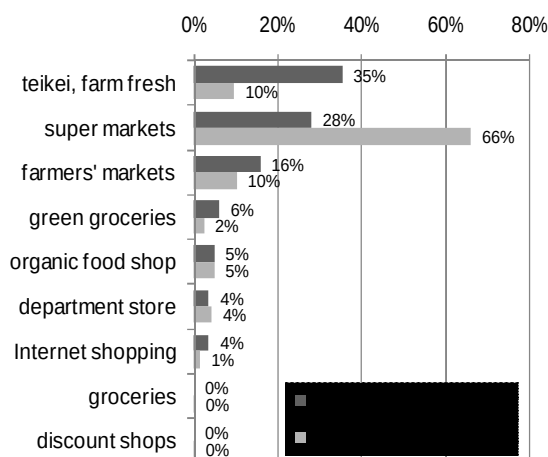
Japanese farmers use most pesticides per area among the OECD countries (OECD 2010), which is attributed to warm and humid climate and horticultural characteristics. The number of those who got the JAS organic certification was only 3,821, cultivating 0.19% of the total farm land (MAFF 2009), but it should be noted that there are many farmers who do not get certification even though they meet the JAS criteria because of its troublesome procedure, and expenses as well. From “*Teikei* survey”, only 15 out of 133 individual farmers got JAS organic certification. So far, as farmers and consumers have direct relationship through *teikei*, there is little need to get a third party certification, and therefore, non-certificated organic farmers abound in Japan.

Marketing of organic products and teikei consumers

According to the Ministry of Agriculture, Forestry and Fisheries (MAFF)’s survey on organic JAS farmers (MAFF 2002), out of 420 respondents, 34% dispatched to agricultural cooperatives or intermediate venders, and 24% sold to consumers directly. According to the *Teikei* survey, 60% respondents gained more than two-thirds of their income from *teikei*, but the amount varied individually. Among 59 respondents who gained more than 90% of their income from *teikei*, three answered that they gained more than 10 million yen (about 10 million US dollar) a year, while six gained less than 500,000 yen (about 50 US dollars) a year.

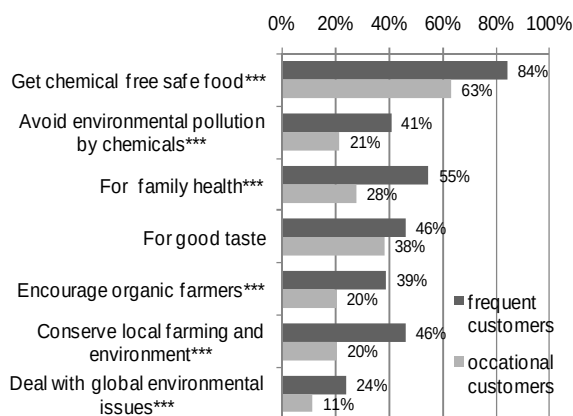
⁸ This standard follows the CODEX guideline.

According to the Consumers' survey, 60% had purchased organic products, but the purchasing channel differed by the purchasing frequency (Figure 1). While occasional customers use nearby vendors, frequent customers were more likely to use *teikei* and direct dispatching. The reasons why consumers purchase organic products are shown in Figure 2. Frequent customers had more incentives than occasional customers, such as supporting farmers and local environments. *Teikei* customers of Noh-no-kai gave more concrete reasons such as their feelings towards the farmers, and the importance of local production for local consumption. Regarding the subject of environmental conservation, those who purchase via *teikei* or direct dispatching understood its significance better than other consumers at 0.1% level.



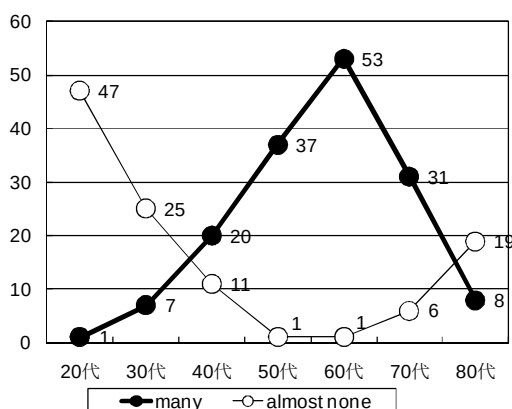
(Source: Consumer survey)

Figure 1. Purchasing place of organic food by frequency



(Source: Consumer survey)

Figure 2. Reason for purchasing organic food by frequency



(Source: *Teikei* survey)
Figure 3. Age distribution of consumers' groups

New approach and teikei's prospect

Noh-no-kai extends various activities such as joint rice production and tea garden, and soy-paste processing. Anyone could participate regardless of age, gender and occupation. *Noh-no-kai*'s uniqueness is that their activities revolved around art and fun. They try to enjoy the nature and culture in the locality. With these, the conflicting concepts of "farmers" and "consumers" are overcome.

The organic farmers would like their consumers to become aware about organic farming. They wish that the consumers would recognize not only the products, but more importantly, the relevance of organic farming in addressing environmental issues, food safety problems, lifestyle and social solidarity. "Teikei" has been an important arm in channeling these issues to the consumers. However, aging of *teikei* consumers is obvious, and many consumer groups said that there were only few young members (Figure 3). Aging and declining of *teikei* consumer groups had been pointed out as problems in the early 1990s, mainly due to the increasing number of working women. With the decreasing number of "housewives", who used to stay at home and exclusively do every household and community chores, time consuming *teikei* activities have lost the needed support and more convenient channels were chosen by the majority. The "Japanese style" organic farming movement came to attract attention in Europe and the US because of various *teikei*-model movements since the late 1980's.

Historical development and present situation of organic farming in Bangladesh

Organic farming movement in Bangladesh

Bangladesh is located in a huge delta formed by the Ganges, Brahmaputra, and Meghna. The total land area of the country is 144,000km² with 15.2 million people in 2008, about 70% of them living in rural areas. Average landholding of a farm household is less than 1,000m², and more than 10% had no farmland (Ministry of Agriculture, 2010a). Because of this, rural people are engaged in various jobs and petty businesses as source of income. The GDP growth has kept at more or less 5% since 2000 (Bangladesh Bank, 2010) supported by growth in the garment sector and remittance from abroad.

Traditional farming in the floodplain and its change

Village D is located in an active floodplain, and used to be inundated for 1-2 meters during rainy season (July to October)⁹. In the village, farmers used to grow *aus* -rice, *aman* -rice (deepwater rice), and jute during the rainy season, and *rabi* crops (pulses, vegetables, spices, mustard, wheat and millets) during the winter season, which supply the daily food for the family. Pulses were used feed for cattle and green manure, as well. Farmers change their cropping patterns based on the yearly hydrological conditions. Their total production used to be stable. Even in 1988, when there was severe flooding, the annual agricultural production was reportedly high. *Aman* rice was severely damaged, but flood water supplied humidity for winter production (Ando& Uchida, 1993). Agricultural by-products such as straws of local *aman* rice, wheat straws, cow dung, jute stick, dried plants of mustard and mustard cake were also important resources. Women are in charge of securing fuel for the family, and women in poor families used to help out in postharvest works.

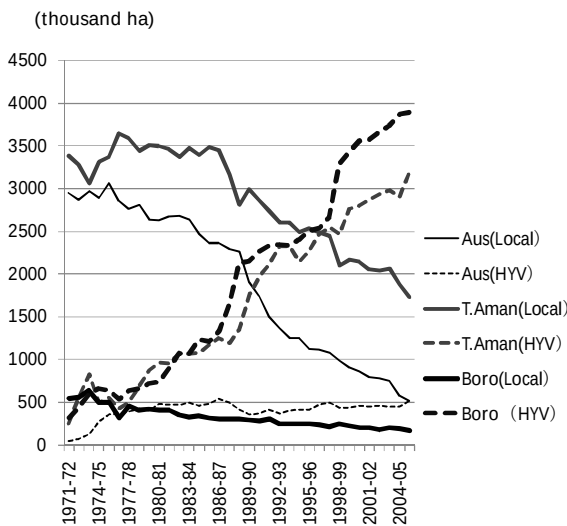
Green Revolution

After the Green Revolution in the 1960s, high yielding rice varieties, irrigation, and chemical fertilizers and pesticides were introduced in Bangladesh. In Village D, the Green Revolution was introduced in 1975, when one wealthy farmer heard about it from a government office. Since then, he started cultivating a high yielding variety of rice. At first, the villagers observed from a distance, but the high yield convinced them that switching to the new variety might bring about enough rice to last a whole year, and thus, they gradually joined the Revolution. The government actively provided loans, HYV seeds, and fertilizers to accelerate the spread of the Green Revolution. As a result, the farmers focused on rice production. Other crops, which used to be grown on farm, had to be purchased from the market. The cows which used to be essential in plowing the land, have been replaced by tractors. The cows are instead raised for milk and meat production and are fed with commercial feeds. The modern agriculture requires cash to purchase irrigation water, seeds, fertilizers and pesticides, creating negative impact on the farmers' livelihood.

⁹ the construction of embankments and roads has helped decrease the inundation (Uchida, 2003)

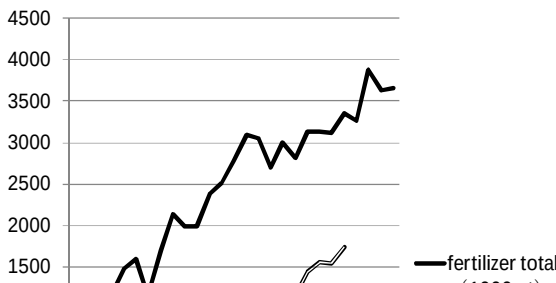
The shift to monoculture cropping system meant transformation to consumer society. This change was accelerated by the increase of off-farm job opportunities, infrastructure development which facilitates population transfer, and admiration for urban lifestyle amplified by mass media. Currently, the rice cultivation in the dry season surpasses that in the rainy season, and the use of chemical fertilizers and pesticides has been increasing (Figure 4&5). More than 8000 local rice varieties existed before the Green revolution nationwide, but now only 1500 varieties are kept at gene banks, and varieties actually cultivated in the field are far less (Gregow 2002).

Bangladesh people are now suffering from severe health problems caused by arsenic in drinking water contaminated through irrigation. It was estimated that more than 3.2 million people in 47 out of 64 districts are drinking arsenic-contaminated water (more than 0.05mg/l level) (School of Environmental Studies, Jadavpur University 2010), and are in danger of skin diseases and consequential skin cancer, as well as cancers in the respiratory organs and urinary organs. It is said that the heavy use of underground water and excessive dose of chemical fertilizers after the Green Revolution are deeply related to the contamination.



(Source: Ministry of Agriculture, 2010)

Figure 4. Change of paddy cropping area by season and varieties



Organic farming movement

Organic farming movement in Bangladesh was initiated by the non-government organizations (NGOs). More than 200 NGOs are trying to spread out the concept of sustainable agriculture (Infobridge, 2010). Proshika is a pioneer NGO, and started “Ecological Agriculture Programme” for vegetable cultivation in 1978 after the soil and environmental degradation caused by excessive use of chemical fertilizers and pesticides was recognized. Now, the program covers 770,000 farmers and 90,000ha (Proshika, 2010). Proshika’s basic strategy is providing loans and implementing various skill development programs including encouraging farmers to become owners of small-scale irrigation.

Microcredit is the main tool of both NGOs and government organizations for empowering the poor in Bangladesh, but UBINIG takes an opposite stance for credit, claiming that it deprives farmers of autonomy, and they promote “New Farmers’ movement (*Naya krishi andlon*)”. UBINIG started its activity in 1981. When Ms. Farida Akthar, the founder of UBINIG, was working at ILO, a foreign expert told her to instruct rural women how to raise chicken. Such an attitude of neglecting local knowledge and skills angered her, and this experience led her to establish UBINIG (an account shared by one of the UBINIG HQ staff). UBINIG’s New Farmers’ movement aims at independence from modern input which caused the environmental degradation and exploitation of farmers. UBINIG recognizes the importance of local knowledge for the promotion of organic farming. For example, seeds are purchased from commercial firms now, but UBINIG thinks that seeds are local resources, and they collect local seeds to conserve species diversity, establishing an exchange network among member-farmers. As regards food security, Sarkar and Itohara (2009) also reported that among 150 small-scale organic farmers of UBINIG interviewed, 98% had attained the household level of food security.

Tangail regional center is the largest center with 90000 *naya krishi* families from more than 700 villages. According to one of the core *naya krishi* members, Mrs. R,

farmers were accustomed to conventional HYV cultivation, and it was not easy for them to understand the merits of “old-fashioned” farming. Amidst of reproach by farmers, women, who are responsible for seed conservation, gradually began to listen to UBINIG. They were convinced by the results, and the support thus expanded. Mrs. R has been with UBINIG since 1998. She started organic farming in her own homestead garden. Her family stopped cultivating HYV rice in the dry season, and grows pulses, spices and vegetables by mixed cropping instead. She owns two cows and makes manure with cow dung and plant residues. Her family manages 40,000m² of land, and said that basically, there was no need for cash except for purchasing *ilish*¹¹, salt, and burning oil. Her confident and vigorous attitude was impressive.

UBINIG also considers the importance of cultural aspects. Their farmer training courses incorporate music in the program, where farmers not only sing songs but also compose songs on their own. Songs are considered vital for sharing common feelings regardless of religion, and the singing program has helped UBINIG to communicate with farmers who were somewhat suspicious. UBINIG does not regard organic farming as a mere tool for improving individual economic condition. The seed exchange network aims at the reconstruction of community by enforcing social relationships. They refuse irrigation based on the belief that water, the public resource, should not be monopolized for individual interests. On the other hand, Proshika sees organic farming as one of the important tools for empowering the poor, and in this point of view, BRAC's approach is typical and advancing that they started exporting vegetables produced by member farmers adding values by EUREPGAP¹² certification (BRAC, 2010). In Bangladesh, as well as in Japan, organic farming movements are diverging largely into two directions: one is toward changing the modern lifestyle which has created various environmental problems, and the other is toward seeking more profit by adding values of “organic”.

Government and Consumers' concerns

Government's involvement in the promotion of organic farming has not been worth mentioning so far. In the National Agricultural Policy issued in 1999 (Ministry of Agriculture, 2010b), the slow expansion of modern technology is mentioned as one of the major reasons for the decrease in productivity. It states that a profitable and sustainable agricultural production system with Integrated Pest Management system is needed. The new National Agriculture Policy draft (Ministry of Agriculture, 2009) states that in order to achieve the Millennium Development Goals, 4-4.5 percent growth in agriculture is required based on modern technology.

According to Sarkar & Itohara (2008), among 105 customers of organic shops including antenna shops of UBINIG and Proshika, 52 belonged to the higher

¹¹ National fish of Bangladesh caught in main rivers.

¹² Certification of “Good Agricultural Practice” issued by Euro-Retailer Produce Working Group)

socioeconomic group¹³. Seventy-two respondents had some doubts about the authenticity of what were sold at the shops, and 95 said that authorized certification was necessary. In Bangladesh, use of toxic ingredients is a serious problem (Hossain et al., 2008). To feed a large city with a poor cold chain system in the hot and humid climate, use of harmful chemicals such as formalin for preservation is rampant. Consumers understand the danger; a need for safe food is potentially high.

Conclusion

Although the economic conditions in Japan and Bangladesh are different, modernization of agriculture started in the 1960s in both countries, synchronizing in the historical context of expansion of consumer society and globalization. As the problems caused by the modern agriculture became more severe, demands for organic farming have risen because of the following concerns: health damage by pesticides (producers and rural residents); fears about the harmful effects of the chemicals (mainly by consumers); added value for more profit (mainly for farmers and traders); damage on the environment by modern agriculture (in rural areas); intensive use of existing resources and monopoly of resources; and the declining interest in agriculture caused by the widespread economic consumption.

The perceived harmful effects of the chemicals to humans were the main factors that paved the way for the organic farming movement in Japan. In Bangladesh, while the harmful effects of pesticides are widely recognized, including its effects on the declining number of wildlife, the pesticides are still being used carelessly by the farmers. For urban consumers, distrust on food in markets and need for safe food is growing, but movements like *teikei* has apparently not emerged yet. Organic farming in Bangladesh was initiated by smallscale and marginal farmers in rural areas, with the encouragement from an outside NGO. The shift to organic farming was made possible because of the two approaches that were employed. These include the provision of loans and skills training so that farmers would gain more profit, and technical assistance and support to the rural livelihood from the consumer society in order to achieve “food sovereignty”, a term used by UBINIG symbolically. UBINIG never denies the need for monetary income, but they recognize and promote the social values of organic farming.

The organic farming movement in Japan also urged reconsideration of lifestyle and society especially during its early stages. Non-monetary values of organic farming are now highly acknowledged by *Noh-no-kai*. They do not seek for getting “something good” from outside by means of increasing cash income, but instead. They try to make ones’ own living by making good use of and enjoying the local resources that already exist. This attitude is similar to that of UBINIG. With regards to value-adding via organic farming, exporting to industrialized countries is popular in Bangladesh, while responding to diversified needs of general consumers is prevalent in Japan. In both cases, consumers stay distant from the farmland. They have no direct contact with rural communities and, therefore, there is a little chance of changing the existing lifestyle of wasting and depleting resources. The value-adding approach will be mainstreamed for

¹³ Those with annual income of more than 180,000 taka (about 3,000 US dollars)

the time being in our consumer society. But when it comes to environmental sustainability, reconsideration of lifestyle is essential. Re-evaluation of non-monetary values of organic farming by *Noh-no-kai* and UBINIG, and sovereignty and cooperation as observed in *teikei* and UBINIG will be more crucial in the coming years.

Lastly, it should be noted that women played a very vital role in the development of non-monetary values of organic farming. UBINIG's activities are supported by women's firsthand experiences in everyday activities. UBINIG, in turn, supports women by re-evaluating their essential roles in families and communities. *Teikei* in Japan has been mainly supported by housewives, but their spouses' involvement is questionable. When women started to go out for work, *teikei*, with its attempt to reconsider the lifestyle became stagnant. Reconsideration of lifestyle requires reconsideration of the unequal involvement of men and women in the daily activities in families and communities. Even though supporters of UBINIG and *Noh-no-kai* do not make up the majority yet, their experiences show that there is a possibility for our society to change to that of fertile co-existence.

References

- Adachi Kyoichiro. 2009. *Organic farming can feed world (Yuki Nogyo de Sekai ga Yashinaeru)*.Tokyo. Commons. (In Japanese)
- Badgley, Catherine, Moghtader Jeremy, Quintero Eileen, Zakem Emily., Chappell Jahi M., Aviles-vazquez, Katia, Samulon Andrea. and Perfecto Ivette. 2008, "Organic agriculture and the global food supply". *Renewable Agriculture and Food Syetems* VOL.22. No.1.pp. 86-108.
- Ando, Kazuo &Uchida, Haruo.1993, "Characteristics of traditional rice production", *More to know Bangladesh (Motto Shiritai Bangladesh)*. Kobundo.pp.20-36.
- Bangladesh Bureau of Statistics (2005): *Yearbook of Agricultural Statistics of Bangladesh 2004*, 381p.
- Bangladesh Bank, 2010, "Annual Report 2008-2009", <http://www.bangladesh-bank.org/pub/annual/anreport/ar0809/chap2.pdf>,p14 (June, 1, 2010)
- BRAC. 2010. "About BRAC". <http://www.brac.net/index.php?nid=9> (June, 1, 2010)
- Harayama Kosuke.2009. "Organic farming movement as the history of loss". *Food community.(Shoku no kyodotai)* Kyoto.Nakanishiya shuppan (in Japanese)
- Hossain Motaher Md., Heinonen Visa, and Islam Zainul . 2008" Consumption of foods and foodstuffs processed with hazardous chemicals: a case study of Bangladesh". *International Journal of Consumer Studies* 32:6, 588-595
- FiBL & IFOAM.2010.*The world of organic agriculture: Statistics &Emerging trends 2010*. Bonn. FiBL& IFOAM
- Gregow,Kevin. 2002."Ecological Farming:Cultivating for Life" *Bangladesh; Environment; Facing the 21st Century,(Second edition)*, SEHD, pp54—57.

- Infobridge, 2010, Forum for Regenerative Agriculture Movement
http://www.infobridge.org/asp/organisation_buew.asp?organization (June, 1, 2010)
- JOAA. 2009. *Survey on consumers understanding on organic farming (Yuki Nogyo ni kansuru Shohisya no Ishiki tyosa)*.Tokyo. JOAA. (in Japanese)
- JOAA. 2009. *Survey on promotion of consumers understanding on organic farming and Teikei (Yuki Nogyo eno Shohisya no Rikai Sokusin to Teikei ni kansuru Tyosa Hokoku)*.Tokyo. JOAA. (in Japanese)
- Ministry of Agriculture. 2009. “National Agriculture Policy (Draft-5)”
<http://www.moa.gov.bd/policy/dnap.htm>. (June 1, 2010)
- Ministry of Agriculture. 2010a. “Handbook of Agricultural Statistics, December 2007”
<http://www.moa.gov.bd/statistics/statistics.htm> (June 1, 2010, in Japanese)
- Ministry of Agriculture. 2010b. “National Agriculture Policy (NAP)”
<http://www.moa.gov.bd/policy/nap.htm> (June, 1, 2010)
- MAFF. 2009. “Prefecture wise number of those who got the JAS organic certification”
http://www.maff.go.jp/j/jas_kikaku/yyuuki.html (June 1, 2010, in Japanese)
- MAFF. 2002. “Production and distribution of products of sustainable agriculture”
http://www.maff.go.jp/j/seisan/kankyo/hozen_type/h_torikumi/index.html (June 1, 2010, in Japanese)
- National Consumers Affairs Center, 2002, *Diversifying organic products marketing (Tayo-ka Suru Yuki Nosanbutsu Ryutsu)*.Tokyo.Gakuyo shobo.(in Japanese)
- OECD .2010.” OECD.Stat Extracts”. <http://stat.oecd.org/Index.aspx> (June 1, 2010)
- School of Environmental Studies, Jadavpur University, 2010 “Our study on Groundwater Arsenic Contamination in Bangladesh” <http://www.soesju.org/arsenic/bangladesh.htm> (June 1, 2010)
- Proshika.2010.”Organic Agriculture Programme”. http://www.proshika.org/eap_n.html (June 1, 2010)
- Sarkar M.D. &Itoyama, Y. 2008. “Organic farming and poverty elimination:A suggested model for Bangladesh” .*Journal of Organic Systems*, Vol .3, No.1, 68-79.
- Takahashi Asako. 2004. “Ground water contamination by arsenic in rural Bangladesh”. *Asian and African Area studies*.Vol4.No.1.pp. 111-129. (in Japanese)
- Toya Yukiyo.1996.” Consumers as supporters of organic farming movement”, *Fifty years’ of Consumers movements (Shohisya Undo Goju-nen)*. Domesu shuppan. (in Japanese)
- Uchida Haruo. 2003 “Water as resource and disaster. “In 60 chapters to know Bangladesh” *Sixty chapters to know Bangladesh (Bangladesh wo Shirutame-no Rokuju-sho)*. Akashi shoten, pp.46-50. (in Japanese).

Yoshino Keiko.2008.” Change of rural life in flood plain in Bangladesh”. *Rural development and Environmental Conservation (Sonraku Kaihatsu to Kankyo Hozen)*. Tokyo. Kokon Shoin.pp17-32. (in Japanese)

Essential Factors in Promoting Endogenous Development During the Depopulation Era in Less-Favored Areas in Japan: A Case of Sugiyama Village, Maizuru City

Ryohei Yamashita

Faculty of Science and Technology
Tokyo University of Science, Japan
ryama@rs.noda.tus.ac.jp

Yasuaki Kuki

Graduate School of Agriculture
Kyoto University, Japan
yakuki69@kais.kyoto-u.ac.jp

Satoshi Hoshino

Graduate School of Agriculture
Kyoto University, Japan
shoshino@kais.kyoto-u.ac.jp

Abstract

A revitalization of less-favored areas that are on the verge of dissolution due to remarkable depopulation is an important subject. In such areas, it is very important not to depend on one-sided and transient support from the outside, but to aim at endogenous development in regional planning in addition to the conservation of sustainable regional vitality.

In this research paper, we aim to clarify the factors of promoting endogenous development by focusing on the role of the administration in the revitalization of less-favored areas in Japan. We selected the Sugiyama village in Maizuru City as an area for research, and analyzed the process of revitalization, by focusing on the actions of the administration. This was done through an interview with the prominent residents of Sugiyama village and officers of Maizuru and Kyoto prefecture.

The survey revealed that the administration was responsible for the accomplishment of endogenous development in Sugiyama village, specifically, for the synergistic effect between the administration and the village. This supports its exact 'quantity' and 'timing' and raises village residents' volition and motivation. The fact that the residents requested for more supportive policies was clearly demonstrated.

Although 'the new public', which consists of various citizen groups responsible for an area is expected to grow in the future, we defined the role of the administration in enhancing potential regional motivation for revitalization.

Keywords: endogenous development, less-favored areas, administration support, depopulation

Introduction

In Japan, some ministry agencies have investigated the sustainability of rural areas, as well as ‘measures against less-favored areas’, which has become one of the most important problems of national land policy in recent years. Based on a macro-level viewpoint, looking at the actual conditions of less-favored areas and the financial restrictions of basic municipalities requires us to consider the ‘selection and concentration’ of public investment in rural management. It is also very important to manage rural areas continuously due to the scarcity of peculiar cultural and ecological value, in addition to the preservation of food production and multiple functions of the farmlands.

Under present conditions, while it is expected that successors in places near less-favored areas will grant permission for entry and offer support, their human resources and organizations are scarce. Since finding a successor can be difficult, we should consider a regional plan that involves endogenous local development.

Endogenous development theorists include Tsurumi (1996), who regarded social change as a process; Mamadou (1997), who regarded it as an effect of raising the level of education and Miyamoto (2007) and Okada (2005), who regard endogenous development as reinvestment of power in an area.

Although there are various views about endogenous development, it is generally regarded as the theory of subject formation in the process of community development in a broad sense. However, in many cases, it means a qualitative ex-post evaluation of local development. However, since its meaning is generally unclear, it cannot be denied that the procedure involved in the strategy of participatory rural planning is not apparent.

While discussing it in the context of rural planning, such as Christopher Ray (2000), endogenous development should not only be considered as local knowledge and technology that is merely antithetical to external dependence and the like, but also of allowing participation in local management of public and private sectors besides a local resident¹. That is, endogenous development that can effectively absorb external support, which High Chris et al. (2007) refers to as hybrid development, should be established².

In this research paper, we pay attention to the village that succeeded in invigorating the critical situation of fate and accomplished endogenous development through urban-rural exchange and community gardens. By determining the present conditions of the area of study and the circumstances of the measures undertaken against depopulation by municipalities³, we considered invigorating the less-favored areas with declining population.

Study Area

The Sugiyama village in Maizuru of the Kyoto prefecture is our area of study (see Fig. 1). According to the 2005 census of agriculture and forestry, Sugiyama Village is a small-scale mountainous village whose population is 64, with 14 households. Its conditions for access from urban areas are comparatively bad and it takes a little less than 3 hours to get there by car from Kyoto City, a travel distance that is not convenient for the young people. It is a typically disadvantaged area whose permanent residents are aging that exceeds 50% of the total population.

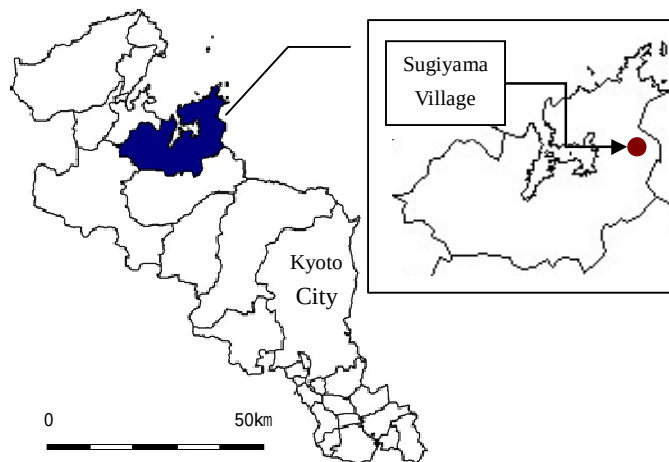


Fig.1 The location of Sugiyama village

For the purpose of grasping the situation of farmland management and the village's local resources as well as collecting other related references, we interviewed three leaders of the regional autonomous organization in the survey conducted in November 2009. Moreover, we interviewed eight personnel of a prefecture in Maizuru in May 2009 and scrutinized the circumstances of the measures of municipality, local change and so forth related to Sugiyama village. Below, we explain the deployment of a local activity for land use, based on information acquired by the investigation.

The Circumstances of Endogenous Development

Depopulation in Sugiyama Village (~1999)

As a result of the rapid progression of the desolation of farmlands in the Sugiyama village, the 2005 census of agriculture and forestry highlighted that the abandonment rate of cultivation rose to 27.8%, making this village the area with the highest rate of abandonment of cultivation in the city. Furthermore, the abandonment of cultivation increased the damage to farmlands by wildlife. The residents could hardly maintain their farmlands. They have also lost the motivation to engage in farming activities.

Tapping the “direct income payment” for endogenous development of intermediate and mountainous areas (4) (2000 ~ 2001)

Direct income payment for intermediate and mountainous areas is a policy that provides subsidy to the villagers on the condition that the farmlands would be managed and maintained for five years. This policy took effect in Japan in 2000. The villagers in Sugiyama village formed a local association composed of 14 households. Meanwhile, the Maizuru agricultural administration helped facilitate the establishment of community gardens as a strategy to maintain the farmlands within the village

Realization of endogenous development (2002~)

Simultaneous with the establishment of the community garden is educating the potential candidates (who are members of the local association) through hands-on and actual demonstration. A handbook about community gardens was also produced highlighting the multifunctionality of agriculture in the village. The handbook also encourages the city residents to gain farming experiences by renting the community gardens in Sugiyama village.

A 1000-m² community garden has a corresponding rental fee of 1000 yen /year. Most of those who have entered into agreement are residents of Maizuru. The rental fee covers the use of the area and the payment for the villagers who are maintaining the gardens. Because of constant interaction and information exchange between the villagers and the plantation users (leases), the community gardening has spread out and expanded, and has become a rural-urban exchange activity.

The community gardening paved the way for the establishment of the NPO ‘Meisui no sato Sugiyama’ in October 2005, comprised of all the village residents, 32 garden users and participants of the rural-urban exchange program. This organization has become the fountainhead of the local vitality because it has also been organizing local events such as music festival and joint harvesting. Table 1 presents the different activities that have been organized by the NPO.

⁴ ‘Direct income payment in intermediate and mountainous areas’ is a policy that delivers a subsidy according to contract area on the condition of continuous management of bad-use conditions of the farmland for five years. It was enforced in Japan in 2000.

Table 1. Principal interaction between actors in the process of endogenous development.

Year	Regional matters	External to village	Internal to village	Maizuru City
1999	Decrease in population aggravated and participation of DIP considered.	Only individual exchange.	Although cultivation abandonment was aggravated, village residents did not have any power.	Advised villagers to apply for DIP as it is considered a trump card for local revitalisation.
2000	DIP was started and the level of abandonment of farmland in the village was improved.		Although farmland maintenance was completed in the wake of application to DIP, there was no successor.	Villagers were asked to start a community garden as a solution to the shortage of successors.
2001	In place of a labour shortage in the village, recruitment for community gardens and maintenance was undertaken.	The residents of the urban areas of Maizuru city mainly participated	In the beginning, efficacy of developing an community garden was skeptical for village residents.	Took charge of the advertisement that proposed developing farmlands in community gardens in villages
2002	Prefaced by endogenous development, community gardens were instituted completely.	Extension of a human network and activity.	At first, although village residents were supervising city residents' activity, an exchange gradually began.	NPO establishment enabled the organisation of various activities.
2005	During the inauguration of the NPO, villages inside and outside this region banded together and formed an organisation.			
2006	The region re-solidified in the wake of the prefectural revitalisation project that was additionally devised.		The event aiming at a successor's cultivation was plotted strategically.	Positioned a village that features continuous endogenous development

Factors that motivated the villagers to engage in endogenous development

Depopulation and aging are two factors that contribute to the declining vitality of many villages in Japan. The model and approach that was employed by Kyoto and Maizuru in revitalizing Sugiyama village is very much impressive.

The Maizuru administration played a key role in transforming the mindset of the villagers to restore the abandoned farmlands. Through their active interaction with the villagers, the latter was able to develop their consciousness of maintaining the farmlands. The DIP also served as a factor in motivating the villagers to restore and improve their farmlands.

The Maizuru administration has also devised a strategy that would not only promote the restoration of the abandoned farmlands, but would also revitalize the local culture, through the establishment of the community garden.

Synergy Effect

The revitalization of the Sugiyama village began by solving the problems expressed by the villagers, which motivated the latter and paved the way for endogenous development. It was also fortunate that the enforcement of the DIP policy coincided with the escalating concern about the preservation of the farmlands. The establishment of the community gardens covered the shortage of labor force that would maintain the farmlands.

For example, Mr M said the following during an interview, *“Some users of the community garden are studying agriculture eagerly, so that farmlands in a village are guided conversely”. “As a user of the community garden who enjoys agriculture immensely, we think that we are favored compared to other areas”. Village residents have enjoyed working hard and cultivating the land.”* From this information, we argue that a direct face-to-face exchange started between residents of the city and the village and this led to the success of the community garden.

In addition, users of the community garden consulted the Prefectural Investment Project, which is a superior government agency. Taking advantage of the human network that was established in the community garden, the workshop by ‘Furusato Hozen Katsudou’ of Kyoto prefecture involved in NPO was held at the time that a new activity plan was being crafted. During the project implementation, the place and time of cooperation of labor that was a sore point during the planning stage, the bilateral work towards planning practice, and sharing results and so on, were resolved. Thus, building the social capital of the village was addressed. That is, the mechanism connected to generate the social capital of the area was included.

Technical and administrative support

Provision of technical support, timing, and continuous encouragement among the villagers are among the essential factors for endogenous development in Sugiyama village. An interview with a Maizuru personnel indicated that as much as possible, they would not like to force their intentions and recommendations for the villagers. Instead, they would like the villagers to just seek for their help and assistance, when needed. However, in times of crises, the Maizuru administration comes in. In addition, the Maizuru administration may withdraw or disregard its suggestions or recommendations should the villagers think that these are no longer appropriate.

Such sensitivity and approaches adopted by the administrative personnel of Maizuru are considered as important factors that led to the endogenous development in Sugiyama Village.

Conclusion

This study concludes that an endogenous development could be induced by an outside organization. Appropriate strategies, proper timing, and harnessing the potentials of the village are among the mechanisms that could help the villagers realize the need to restore and revitalize their village.

Acknowledgement

I would like to express my gratitude to the residents of Sugiyama village and personnel from Maizuru and Kyoto prefecture. I also wish to acknowledge the generous support that I received from the laboratory members of rural planning at Kyoto University.

References

- Christopher Ray (2000): Endogenous socio-economic development in the European union-issues of evaluation. *Journal of Rural Studies*. 16. pp 447-458.
- High Chris, Nemes Gusztáv (2007): Social learning in LEADER: Exogenous, endogenous and hybrid evaluation in rural development. *Sociologia Ruralis*. 47(2). pp. 103-119.
- Mamadou Ndoeye (1996): Globalisation, endogenous development and education in Africa. *Prospects*. Vol.27 No.1. pp79-84.
- Miyamoto Ken-ichi (2007): 'Environmental economics'. Iwanami Shoten. Tokyo (In Japanese).
- Ron Martin, Peter Sunley (1998): Slow convergence? The new endogenous growth theory and regional development. *Economic Geography*. Vol.74 No.3. pp201-227.
- Tomohiro Okada (2005): 'Tiikizukuri no keizaigaku nyuumon-tiikinai saitoushiron -'. Jititai Kenkyusha. Tokyo (In Japanese).
- Tsurumi Kazuko (1996): 'Deployment of endogenous development theory'. Chikuma Shobo. Tokyo (In Japanese).

Analysis of the Social Conditions Conducive to Sustainable Organic Rice Farming Around Lake Biwa in Japan

Makino Atsushi

Lake Biwa Museum Oroshimo 1091
Kusatsu, Shiga, Japan
atsushi@lbm.go.jp

Yang Ping

Lake Biwa Museum Oroshimo 1091
Kusatsu, Shiga, Japan
yang@lbm.go.jp

Abstract

Environmental sustainability represents a recent new direction for agriculture in Japan. Agricultural modernization resulted in a number of serious environmental problems over the past half-century or so, including water pollution and reduction in biodiversity. To solve these problems, it is important to deepen the notion of sustainable agriculture in the farming community. We analyzed the social context of instituting new farming practices by using the family approach in organic rice production in a village near Lake Biwa, in Japan. In this village, one family has adopted the techniques in organic rice farming. Their farming techniques and the corresponding significant results were recognized by the other farmers in this village. Furthermore, their methods, including the distribution of organic products, have been supported by external advisers and urban consumers. This paper argues that the local community plays a vital role in ensuring the sustainability of organic rice farming in Japan.

Keywords: rice sustainability, organic farming, local community, daily life conservation system

Introduction

Rice farming is widespread in the East Asian monsoon zone. In this area, attention to the promotion of sustainable rice farming has been growing among governments, environmental groups, and economists. While these groups may have different intentions, it has been recognized that reducing the use of chemical fertilizers and pesticides in paddies has positive effects on environmental restoration projects, particularly on the rehabilitation of rivers and lakes. In Japan, the rice paddies comprise over half of the total agricultural land. Thus, organic rice agriculture has become one of the government's most important environmental policies.

The concept of 'organic farming' has diverse meanings among countries and areas. The Japanese government has established a certification system about organic farm products (JAS Law), whereby only those produced without pesticides and chemical fertilizers are defined as organic. Because the authors are interested in farmers' health and the effects of commercial rice farming on the environment, this paper considers

organic farming as a farming technique which does not use chemicals all throughout the period of rice farming. From an environmental point of view, the question is how to expand the area devoted to organic rice farming. In Japan, organic farming is a long-standing social movement, the underpinnings of which, have, however, been changing rapidly in the last two decades. The expansion of the area devoted to rice farming around Lake Biwa provides a good example to illustrate this change, the proportion having increased from 0.9% to about 25% during the past decade (including rice farming with no chemicals).

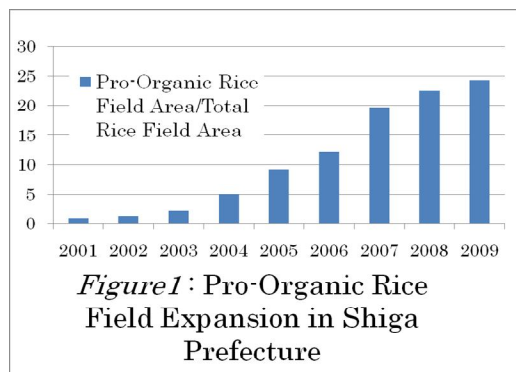
Several studies examined the establishment of conditions conducive to the spread of organic farming. But, these have largely been limited to outside influences (e.g., the introduction of organic farming techniques, stabilization of management structures, changing demand by urban consumers, and changes in governmental support and subsidies). Little attention has been given, however, to the occurrence of new social conditions in small-scale communities and how this may affect the acceptance of such changes in farming practice.

In this paper, we analyzed the new social conditions amenable for the spread of sustainable organic rice farming around Lake Biwa in Japan. Specifically, this paper focuses on one village or small-scale community in which, the proportion of organic rice farmland has been increasing with remarkable speed. Examination of the process of the spread of organic rice farming in this village herein after referred to as “R village”, offers a key to understand the social conditions conducive to sustainable organic rice farming.

Sustainable Rice Farming in the Lake Biwa Basin

Rice Farming in the Lake Biwa Basin

Shiga Prefecture is located in the centre of Japan, just east of Kyoto. It holds the biggest fresh water lake in Japan, Lake Biwa, which accounts for about 1/6 of the total area of the prefecture. Rice farming is a major occupation around the lake, and rice fields occupy about 91% of all the farmland in the prefecture. In 2001, the prefectural government launched a policy to encourage farmers to shift from conventional farming practices into more sustainable agriculture. The aim was to reduce the application of chemicals (fertilizers, pesticides, herbicides) by 50% compared to conventional farming. According to statistics compiled by Shiga Prefecture, about 25% of the paddy area had switched to pro-organic rice fields in the Lake Biwa Basin by 2009 (Fig.1).



In Shiga Prefecture, much of the rice farming is done by the residents of about 1500 small-scale communities (1). Among them, we have chosen to examine one particular 'organic farming village', where a considerable area of farmland has been switched to organic farming. This village, which is located on the western shore of the lake, represents some farms where few or no chemicals were used in 40% of the total paddy farmland in 2009 (based on taped interviews). We wished to learn what conditions have made this community into 'the organic rice farming village'.

A Brief History of Japanese Organic Farming

Organic farming may be regarded as a social movement seeking to ameliorate environmental degradation and reform the industrialized food system. It is useful to divide the history of its development in Japan into three stages (2).

The first stage lasted from the early 1970s until the early 1980s, during which, organic farming was launched by a few farmers, consumer activists, and volunteer experts. These pioneers were not able to organize other conventional farmers to follow their lead. Furthermore, organic farmers of this period faced great difficulties in distributing their products (Matsumura and Aoki, 1992). In Japanese rural areas, cooperative distribution systems for farm products were widespread, but organic crops were usually excluded for several reasons (e.g., substandard form, or worm-eaten condition of the produce). Organic farmers had found that they had to strengthen their relationships with urban consumers who sympathized with their goals (Kokuminseikatsu Center, 1981). To accomplish this, a unique cooperative distribution system for organic produce, called the TEIKEI system, was established, involving both the farmers and their urban consumers.

The second stage started in the late 1980s and lasted just a few years. "The shift from movement to business" gradually took place. (Masugata, 2008). The presence of organic agriculture was recognized to some degree by urban consumers as their interest in natural foods and organic products grew. In this stage, organic farmers' distribution channels and partners diversified (Nakajima, 1998. Masugata, 2008). In particular, some newly-devised rice farming (e.g., "Aigamo Method"), which was useful for reducing chemicals, started in some areas (Tokuno, 2001).

From 1992, the third stage began, during which, the national government has recognized and regulated organic farming, and incorporated it into some administrative policies. "The Basic Direction of New Policies for Food, Agriculture, and Rural Areas" (the Ministry of Agriculture, Forestry and Fisheries of Japan, 1992) is a typical example. The government announced the promotion of sustainable agriculture in particular, and expressed the view that organic farming in Japan was a variation of this (Ooyama, 2005).

Arguments and Method

From the above review, it may be noticed that early adopters of organic farming had to pay attention to many conditions. In particular, it seems that two conditions (i.e., farming techniques and high value addition to agricultural products, farming cost and benefit) had been the most influential conditions for organic paddy expansion. Moreover, these two conditions influenced the government to embark on new policy to encourage organic farming. However, this may mean that the life of the rural village people comes to be controlled more and more by the people of the city. Therefore, pioneers of organic farming movement and sympathizers have been warned on this (Hatano, 1998. Kubota, 1998. Nakajima, 1998).

Under such situation, several studies applied interests to another side different from agricultural business of organic farming (Matsumura, 1995. Tokuno, 2001. Masugata and Matsumura, 2002.). As Matsumura argues, conventional farmers' attitudes toward organic farming also began to change. After mentioning some cases in which organic farmers had organized other farmers in their community, Matsumura (1995) noted that "community-based" movements appeared. In addition, Tokuno (1998) has drawn the "Living Farm theory" from his field studies. According to his theory, Japanese agriculture is fundamentally a kind of daily life conservation system constructed by four aspects (i.e. farming techniques and agricultural products, farming cost and benefit, life structure and community organizations, residents' cultures). Even then, he pointed out that former studies about farming and food-system have not focused on the whole system fully.

We agree on the previous studies that this kind of daily life conservation system is the basic condition to sustain rice farming. Generally, farmers in Japanese rural areas had to act in cooperation with each other to sustain their infrastructure through communal waterway maintenance, pest control, and so on. As a result, farming communities had, long ago, set up communal structures to perform cooperative works involving agricultural affairs, and early organic farmers' movements had to influence decision-making at the community.

However, the circumstances in the present case of R village were different. The "organic farming villages" around Lake Biwa depended on the success of only one or a few large-scale organic rice farmers. Almost all the organic farmland areas in R village, constituting about 30% of the total farmland are cultivated by Mr. X (pseudonym, born in 1948) and his family members. The increase in large-scale organic rice farming seems to have been accompanied by a remarkable decrease in the number of farmers over the past decades. In other words, there are now new and different conditions conducive to the spread of sustainable organic farming, owing to the decrease in farmers and a lessened role for communal decision-making.

To analyze these new social conditions in relation to the development of organic farming, we will focus on the following three topics: the process of growth of X's organic rice farming business, the circumstances of his garnering of so much farmland, and the thinking of other village residents with regard to the changed activities of the

community.

Over a three-year period, one of us (the first author) conducted open-ended interviews with the residents in this village. The interviewees included organic rice farming families, but the voices of conventional rice farmers and several leaders of the farmers' organization ("Nouji Kumiai") and other community organizations were also considered.

Growth of Organic Rice Agriculture in R village

General Conditions in R village

R village, which is located on the western shore of Lake Biwa, has about 200 households. Rice farming and fishing were the major sources of subsistence of almost all the residents until 1960s. Until 2000, this village has 66.6 hectares of farmland, which is occupied almost entirely by paddy fields. However, the number of farmers has been decreasing for several decades (Table 1). There are just 33 farm households at the time of the study. A large number are part-time farmers, and full-time farm households are very few. Nowadays, there are many community-based organizations and non-farming activities in this village. In particular, green tourism, which promotes the natural and cultural resources (spring waters, small streams, the lake shore, etc.), has been on the rise in this village in recent years.

Table 1. Farming Households in R village (Shiga Prefecture)

Annual	Total Households	Total Farmers Households	Farmer Households (breakdown)		
			Full-Time Farmer Households	Class1 Part-Time Farmer Households	Class2 Part-Time Farmer Households
1970	127	103	0	43	60
1980	136	78	0	9	69
1990	138	45	0	3	42
2000	199	33	1	2	30

Note: Class1: Households mainly dependent on agriculture.

Class2: Households mainly dependent on occupations other than agriculture.

Source: World Agriculture and Forestry Census (Annual survey)

The organic farming area occupies about 40% of total farmland in this village. There are eight (8) organic farmers participating in an organic farmers' group, but almost all of them are part-time farmers. X cultivates an area of about 18.5 ha, the largest among the members. X, who may be characterized as a large-scale organic farmer, has three kinds of image to uphold: an ideal organic farmer, a pillar of large-scale farming, and a member of the community organization. In the following, we will focus on the process of growth of X's organic rice farming endeavour.

The Beginning of Environment-Friendly Rice Farming

X was born in a small-scale rice farmer's family in R village. His parents had engaged in both rice farming and fishing, but he himself became a self-employed businessman. However, two circumstances brought him back into the agricultural fold--inheriting his family's rice fields, and participating in an agricultural experiment.

When his father died in 1986, X inherited his family's small rice fields. He was well aware that rice farming was not profitable at that time, but he also recognized that the farming circumstances were rapidly changing in R village. In particular, integration of paddy fields was taking place. This integration of farm paddies changed the operation of existing small, irregular paddies requiring much handwork requires that use of agricultural machinery. X thought that this new development provided a chance to start farming rice profitably.

Some years later, in 1989, Shiga Prefecture conducted an experiment in organic rice farming techniques in R village. X's rice paddy was incorporated into the experimental plots. The aim of the experiment was to examine whether rice farming could still be undertaken while reducing the consumption of pesticides and chemical fertilizers, even just half of that of conventional farming. X's participation in this project gave him the opportunity to launch himself into organic farming. In the following year, he formed an organic rice farmers' group with other several farmers from this village.

The two opportunities affected X to teach us something about the new circumstances that are being faced by the organic farmers in the transition period between second and third stages in the above-descended history of organic farming. Early organic farmers who started out during the first or second stage had to try to organize as many farmers as possible in their village. However, despite the establishment of a small organic farmers' group in R village, it does not seem that X had any strong motivation to organize many conventional farmers in this village. As shown in the next section, he was mostly interested in expanding his own organic farmland area.

From Environment-Friendly Farming to Organic Farming

Farming Expansion

X had the following plan concerning farmland acquisitions. When he began his organic farming in 1989, he predicted that the paddy fields he was cultivating would increase by 10 hectares by the end of 10 years. Based on this forecast, he constructed farm building with facilities for rice drying and polishing. However, as early as 1993, he was already working in the anticipated 10 ha. He thought this was enough for the time being, but even then, the price of rice had continued to fall. Therefore, he had to extend his family's paddy. Furthermore, he had to invest in new farm buildings to match the expanding scale of his farmland.

X's entry into organic rice cultivation went well, but things have not always gone smoothly during the past two decades. To succeed in organic farming, X had to solve two problems related to the distribution system of his products and improvements in farming techniques.

Forming Distribution System

Access to a distribution system is a necessity for the organic farmers. But, X's concerns in this regard were different from those of earlier organic farmers. He was more concerned with the price of rice produced through environment-friendly farming than with exclusion of organic crops from existing distribution systems.

If X had sent his organic rice to the usual cooperative distribution system, it would be purchased at the same price as conventionally-produced rice. To get a better deal, in line with his higher costs, he went to negotiate with the cooperative in Osaka Prefecture directly. Fortunately for him, the cooperative also had recently taken a partner in a plan whereby urban customers could interact directly with farmers. As a result, X was able to sign a contract with the cooperative's partner to have his rice delivered to the members.

Improvements in Farming Techniques

Weed control is important for organic rice farmers. Good weed control determines the success of labour-saving farming, and greatly influences agricultural productivity. In Japan, most farmers face a downsizing in available family labour as well as their own aging. Therefore, many farmers make little use of chemical herbicides for weed control, even if they hope to engage in sustainable agriculture. Contrary to this, X tried to be free of agricultural chemicals, and thus, he decided to stop applying herbicides in 1992.

His cultivated paddies "were beaten" by weeds for many years thereafter. According to him, lowered productivity was a reflection of difficulties in weed control. In R village, when using conventional agricultural chemicals, farmers are able to harvest about 4800 kg/hectare of rice paddy per year. X could only harvest about 3000 kg/hectare because of the growth of paddy weeds. With technical guidance of outside experts, he was able to harvest about 4200 kg/hectare in recent years. X told us that the immediate goal was to increase the harvest to the same level as conventional rice agriculture.

Despite setbacks, the growth of X's organic rice farming business looks like a success story in the Lake Biwa area. As for the development of his organic farming skills, it seems that outsiders' cooperation has been more important for him than community ties in R village. However, in our taped interviews, X and his family members consistently emphasized that community ties were the most important factor in their rise and progress. What then compelled him to seek favoured status as a member of the community?

Role of a Large-Scale Rice Farmer in the Village

Community Change and Organic Farming

To put this single organic farmer's success story in context, we must consider the broader rice farming conditions in the small-scale community of R village. We used to understand why this community became "the organic farming village".

We recognize four factors involved in encouraging the expansion of organic farming in this village. These include: (1) a crop distribution system (reaching consumers) (2) farming techniques, (3) farmland accumulation, and (4) community ties. As noted above, X's success seems to have been partly dependent on the opportunities he had to systematically extend his farmland holdings.

His amassing of farmland is connected with recent demographic trends in Japanese rural communities. In rural areas including Shiga Prefecture, the number of farmers has been decreasing for several decades. In 1960, there were about 15 million farm workers in rural areas. Forty years later, the number went down to 3.9 million. In addition, aging of the remaining agricultural labour force has been steadily progressing. As a result, the proportion of abandoned cropland has been increasing. Such abandoned cropland area is still very scarce around Lake Biwa. In Shiga prefecture, the proportion of abandoned cropland among all cultivated land is only 1.6%, the third lowest among all prefectures. Several studies have concluded that this is due to a concentration in Shiga at farmland being maintained by full-time farmers. They furthermore suggested that this concentration was partly due to the prevalence of land leases among residents around Lake Biwa (Kikuchi, 2009).

The Rise of Large-Scale Rice Farming

Figure 2 summarizes these tendencies as they occurred in R village over several decades. This figure displays three tendencies related to rice farming: a gradual decrease in paddy area, a noticeable sharper decrease in the number of agricultural labourers, and a rapid increase in leased paddy area. From these data, we can infer that the decrease in the number of farmers was causally connected with a few rice farmers' expansion through farm land leasing. Unfortunately, there is not enough statistical data to demonstrate this for sure because of the lack of information about land leasing among the residents of this village.

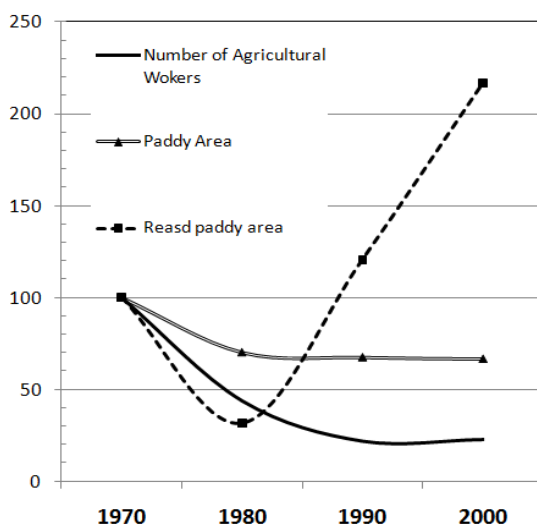


Figure2. The changes in the basic conditions of the agriculture from 1970 to 2000 in R village.

Note: Parameters are index when they assumed 1970=100.

Source: World Agriculture and Forestry census (annual years)

Based on our taped interviews, two aspects of X's accumulation of farmland was clarified, as follows:

- X has extended his rice fields mainly through land leasing. He increased his holdings of paddy fields for cultivation from 0.8 ha to 18.5 ha with this way over the course of two decades. Initially, he had purchased only 0.8 ha. Despite the negative perceptions of almost all farmers about the prospects for rice farming, he decided to extend his farmland.
- X has access to farmland in R village territory. In essence, his land leases are limited to this community. This is intentional. According to X, organic farming is still labour-intensive, even now. In order to cultivate wide areas of organic rice paddies with limited manpower, it is more economical to focus on paddy fields in a single village's territory.

This second aspect is the key to understanding the relationship between organic farming and community change, in as much as it shows the continuance of traditional land use customs despite societal changes. Land use has traditionally been based on residents' view that village territorial lands (i.e. the settlement proper, surrounding farmlands, nearby, and other forests or lake shore) have always been used by residents of the same village. One sociologist has pointed out this local attitude of "our domain" like one independent nation's territory (Kawamoto, 1983).

This customary view of common land use among residents facilitated the accumulation of farmland by X (Figure 3). He told us, “*The farmland in R village had to be used by us farmers from this village*”. He extended his paddies by leasing land lease under the conditions of a decrease in farmers in this community, and the need to maintain traditional land use customs. The other village residents who had abandoned rice farming themselves rented out their farmland based on the land use custom than on their sympathy with X’s aims, although the latter also played a role.

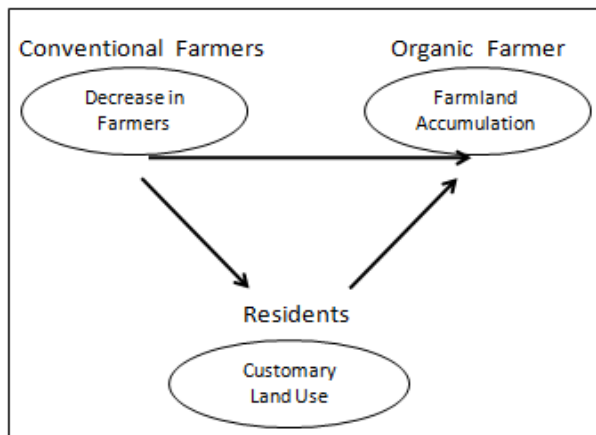


Figure3. Farmland Accumulation Process(Hvillage)

Maintaining Agricultural Resources Through Collective Activities

While the number of farmers in Japan has been decreasing, the remaining farmers have been forced to face several problems. In particular, a serious decline in common agricultural resources management has become prevalent, because there are no longer enough farmers to manage those resources.

In R village, the problem of communal resources management had become serious too. The farmers including X, had been able to maintain their own farmlands, but they had not been able to cope with the communal management problems. As a result, in recent years, the farmers’ board (“Nouji Kumiai”) has decided to modify the waterways management system. The main point of change was to ask non-farming residents who hold in this village to participate in the cooperative maintenance of waterways. We need to look at the social inter relationships that lead to promote this sort of communal participation and also consider whether similar community-ties have encouraged organic farming.

Reforming daily life conservation system

In response to resource management crisis, the residents have started new programs for the maintenance or improvement of agricultural and living natural resources (e.g., waterways within the settlement, small streams and irrigation canals, reed beds at the shore lake, and community forests). There are some common points among these

community-level activities. The first is mobilizing the non-farming residents as participants. The second is that the participants are mainly concerned with improving their residential environment rather than agriculture per se.

In R village, such activities started after a famous photographer produced a documentary about the village people's water use in daily life. After airing it in the television, the cultural landscape of this community became their attraction. The residents formed a group of volunteer guide. A village leader told us that *"the main purpose was to maintain our day-to-day life in this village. We need to set up a new form of green tourism"*.

Over 8000 tourists visit this village every year. The resident volunteers have published several kinds of leaflets to introduce their village to the tourists. The recommended sites include many wells with spring water, small streams, the small-scale fishery, reed beds at the lake shore, and paddy fields. Resident volunteers guide many urban tourists to their village every day. Urban tourists pay a corresponding guidance fee to the community organization, which covers their visit to the village together with one or two resident volunteers.

One leaflet describes the values of paddy in this village as following. "These paddy fields are joined to the rivers and Lake Biwa by the water cycle. Several species of fish, including crucian fish, catfish and others used to come to the paddy fields from Lake Biwa. To create a good habitat for many creatures, the volunteers engaged in environmental paddy restoration together with many village residents." In summary, discovery of the environmental value of the paddies is emphasized in their new green tourism program.

Some farmers, including X, have taken part in these activities as resident volunteers. In recent years, they have initiated some environmental conservation activities concerning waterways, small streams, and reed beds at the lake shore. In particular, they have focused on maintaining the relationships between their rural cultural landscape and food-system. As a fulltime farmer, X would have one of the more important roles to play in such activities.

Conclusion

From what has been discussed above, we can conclude that the new social conditions conducive to sustainable organic rice farming in R village are based on several decades of community changes in this village. The rise of 'the organic farming village' is a reflection of the transition, common around Lake Biwa, from an agricultural community whose members were almost all farmers to a residential community in which majority are non-farming residents. Such community changes have involved not only a decrease in rice farmers over the past four decades, but also establishment of a new relationship between residents and village territorial lands.

In R village, two aspects of this transition were important in the rise of organic rice farming: the shortage of “farmland pillars” caused by the rapid decline in rice farmers and the start of cooperative maintenance activities. From outside, the former has generally been viewed a part of the disintegration of rural communities, perhaps to be addressed by “reform” led by urban volunteers. However, the residents of R village have chosen a different path. They have overcome the difficulties of farmland management themselves, on the basis of their traditional land use customs. X’s accumulation of farmland and the expansion of organic farming have been based on other farmers’ long-established ways of thinking.

Other farmers have not always recognized the value of organic farming. However, in R village, the dominant organic farmer’s reputation as a pillar of community involvement has been explicit for a decade. Resident volunteers have invited them to join their new rural revitalization activities. Because X and his family members have already gained respects from the community through such activities, they told us that the most important prerequisite for sustainable organic agriculture is their strong ties with local community or “Mura”. In R village, almost all residents stopped their rice farming. However, it is very important for the greater part of residents to maintain and create daily life conservation system. The emergence of ‘the organic farming village’ reflects the residents’ decisions.

Our findings recounted above are immediately applicable to limited parts of the organic rice farming milieu in Japan. Still, there may be some room for generalization. Further qualitative and quantitative research on communities will surely help clarify further the social conditions amenable to successful organic farming in Japanese rural areas.

Note

- 1 An “agricultural community” is local agricultural society within any Municipality. According to the “World Census of Agriculture and Forestry 2000”, there are 1,540 agricultural communities in Shiga Prefecture. To be more precise, such ‘agricultural community’ isn’t always consistent with the area or members in a “Mura” in Japan. However, in Shiga Prefecture, they usually accorded with small scale community or “Mura”.
- 2 Opinions are divided among researchers on the number of stages of organic farming history. Some researchers regard after 2000 as the fourth stage with the view point of Japanese certification policy problems. There are enough reasons for these points. However, as the purpose of this paper is concerned, we will not discuss such problems hereafter.

References

- Aoki, Shinji. 1998. “Toshi Nousei Kankei to Kankyo Mondai” H. Funabashi and N. Iijima ed. *Kouza Sakaigaku 12: Kankyo*. Tokyo: Tokyo University Press, pp43-73. (in Japanese)
- Aoki, Shinji. 2001. “Yuuki Nougyou no Kanousei” H. Torigoe eds. *Kouza Kankyo Shakaigaku 3 Sizenkankyo to Bunka*. Tokyo: Yuhikaku, pp133-157. (in Japanese)
- Hatano, Takeshi. 1998. *Economics of the Organic Agriculture*. Tokyo, Nihonkeizaihyoronsha.

- Hatano, Takeshi. 2007. "Yuuki Nougyou o Meguru Mura no Konfurikuto" in Japan Association for Rural Studies and Ikegami Kouich ed, *Mura no Shigen o Kkyuusuru*. Tokyo: Noubunkyou, pp132-142. (in Japanese)
- Kato, Kouich. 2004. Structural Transformation of Jib (Families) and Maeul (Village) in South Korea. "Annual Bulletin of Rural Studies" Vol. 40, pp111-153. (in Japanese)
- Kawamoto, Akira. 1983. *Murano Ryouiki to Nougyou*. Tokyo: Ienohikariyoukai. (in Japanese)
- Kikuchi, Toshio. 2009. "Kinki-Inasakukeiei to Social Capital" A. Tabayashi, T. Kikuchi, K. Matsui ed. *Nihon Nougyou no Iji System*. Tokyo: Nourintoukeikyokai, pp286-310. (in Japanese)
- Kokuminseikats Center eds. 1981. *Nihon no Yuukinougyo undou*. Tokyo: Nihonkeizaihyouronsha. (in Japanese)
- Kubota, Hiroko. 1998. "The New Phase of Organic Agriculture Movement in Japan." *Annual Bulletin of Rural Studies* Vol. 33, pp185-197. (in Japanese)
- Masugata, Toshiko. 2008. *Yuukinougyo Undo to <TEIKEI> no Network*. Tokyo: Shinyosha. (in Japanese)
- Masugata, Toshiko, and Matsumura, Kazunori. ed, *Shoku, Nou .Karada no Shakaigaku*. Tokyo: Shinyosha. (in Japanese)
- Matsumura Kazunori, 1995, Thought and Practice in the Japanese Organic Farming Movement. "Japanese Sociological Review" 45-4:39-53. (in Japanese)
- Matsumura, Kazunori and Aoki, Shinji eds. 1992. *Yuukinougyo Undou no Chiikiteitenkai-Yamagata Ken Takahata Chou no Jissenkara*. Tokyo: Ienohikariyoukai. (in Japanese)
- Nakajima, Kiichi. 1998. "A study on Strategies for Organic Farming in Japan: Between an aspect of Social Movement and that of Agriculture of Value Highly-added". *Annual Bulletin of Rural Studies* Vol. 33, pp55-80. (in Japanese)
- Ooyama, Toshio, 2005. "Kankyohozentekinougyou no Tenkai no Shojouken" Sengo Nihonno Shokuryou, Nougyou, Nouson Henshuuinkai and K. Nakajima, K. Furusawa, H. Yokogawa ed. "Nougyou to Kankyo" Tokyo: Nourintoukeikyokai: 209-231. (in Japanese)
- Tokuno, Sadao. 2001. "Nougyou niokeru Kankyohakai to Souzou" H. Torigoe eds. *Kouza Kankyo Shakaigaku 3 Sizenkankyo to Bunka*. Tokyo: Yuuhikaku, pp105-132. (in Japanese)
- Tokuno, Sadao. 1998. "The Organic Farming Movement Viewed from the Living Farm Theory". *Annual Bulletin of Rural Studies* Vol. 33, pp9-41. (in Japanese)
- XIE, Xinmei, Yamamoto, Naoyuki, Nishiwaki, Ayu. and Kobae, Shoichiro. A comparative analysis of organic farming in China: A case study of four corporations in Zhejiang, Changxing County. "Journal of Organic Agriculture Research" Vol. 8, pp163-179. (in Japanese)

Can Citizen Farming Change Agriculture and Rural Community? A Case Study in an Urban Neighborhood in Japan

Mima Nishiyama
Faculty of Horticulture
Chiba University
mima@faculty.chiba-u.jp

Abstract

Recently, many urban residents have started various kinds of agricultural initiatives. They participate in the harvesting and practice farming in community gardens. Some of them have started to engage in professional farming. I call this participation by urban residents “citizen farming.” Using a case study research, this paper shows how urban residents engaged in agriculture expand locally-based agriculture and rural community. Some citizen farming consists of locally-based agriculture by both farmers and urban residents working together.

The case includes Shiroy Environment School and locally-based family farm in Shiroy city. Shiroy Environment School consists of about 100 urban residents. They maintain community gardens together. In addition, they hold events for promoting environmental and food education. Their activities expand the opportunities for practicing farming for urban residents. At the same time, they engage in sustaining locally based agriculture and natural resources by supporting farmers.

This paper analyzes how citizen farming operates and how collaborating farmers have changed their farm management. This paper also discusses the roles being played by citizen farming in rejuvenating the weakening rural community.

Keywords; locally based agriculture, rural community, citizen farming

Introduction

For the past decade or so, the interest in agriculture and agricultural community has been on the rise among urban residents who wish to be close to nature. Globalism has been spreading in every corner of our lives, while production has become disconnected from consumption and individuals have become nothing but pawns in segmented society. As a result, healing is being sought in life close to nature.

On the other hand, how do agriculture and rural living fare in reality? It is supposed to enhance one's skills and ingenuity at work close to nature, or to live a blessed life of consuming natural products at one's discretion. In reality, however, opportunities to be financially independent with farming alone are limited, and if the family is forced to become part-time farmers, their life becomes decentralized. The gap between the remaining traditional values of family or community and the personal values with inclination toward freedom often strain relationship in multi-generational families. The

decrease in farming population means less group work; loss of the true spirit of festivals; and, the weakening community ties. One cannot deny that the rural life, too, is facing this crisis.

Many urban residents are now involved with citizens' farms and conservation of satoyama, mostly in sub-urban areas. They do not only purchase at farm stands and participate in workshops, but also take part in actual farming. Such activities of urban residents are referred to as "citizen farming".

This paper analyzes how citizen farming operates and how collaborating farmers have changed their farm management. The role of citizen farming in rejuvenating the weakening rural community is also discussed.

Methodology-Community Perspective in Local Food System

The growing momentum of local food system was one of the backgrounds of the increasing interest of urban residents in agriculture. Let us first examine how local community has been regarded in terms of local food system.

The local food movement such as farmers' markets and community-supported agriculture (CSA) became noteworthy in the 1990s in the United States. Because of its firm stance against the negative impact of globalization, the local power against the global power attracted much attention. Consuming local products and circulating economy within a community can stop the economic slide. These are obvious examples of explaining the importance of the local movement.

In Japan, the local production for local consumption movement spread nationwide around the year 2000. Although it was under the initiative of the national and local governments, it was significantly the first widespread movement that recognized the importance of connecting producers and consumers at the local level (Nishiyama and Kimura 2005). But according to Nishiyama, who collected data from farm stand customers, despite the various corporate scandals regarding food, one of the reasons of the success of the local production for local consumption movement, enhanced the consumers interest in food, their interest in community was not very apparent (Nishiyama et. al, 2007).

What it fundamentally means when the local attracts attention is that the local community (land) can be connected with people in order to find a solution. Akira Ono who analyzed watershed management is now looking carefully at the connection between the community (land) and people (Ono, 2005). He says, "Mountain, river, and ocean are organically connected as a natural ecosystem," and then points out the possibility and need of people connected by a watershed system to be connected in terms of both consciousness and actions. A term foodshed was born from watershed, and Kloppenburg and et al pointed out its importance (Kloppenburg and et al, 1996). Foodshed is a place where one is responsible for producing, consuming, and disposing of one's own food, and where one can know that one's own life is rooted in the mother earth. To love and know one's land is to take responsibility of human and land

management, controlling the moral distance from globalism.

Case Analysis - Possibility of New Community around Food and Agriculture

Local regions in terms of human-land connection will be examined, and changes in community through the local food system activities will be analyzed. The subjects are a non-profit organization of urban residents that manage satoyama and abandoned farm lands in suburban areas, and farming families who live where the NPO operates.

NPO Shiroi Environment School in Shiroi City, Chiba Prefecture

Shiroi City in northwestern Chiba Prefecture has mixed population. The Shiroi Environment School was launched in 2000 and currently, has about 100 urban residents working in satoyama and a collective citizen's garden which was built on an abandoned farmland. Through intimate daily communication with farmers, the school has been providing eager urban residents with various opportunities besides the citizen's garden. They may participate in farming sessions, help out the farmers during the busy season, and improve satoyama. They maintain 7.1-ha of satoyama and 3.5-ha of farmland. It is noteworthy that such achievements were the fruits of the relationship of mutual trust which was built on close daily communication with the farmers, the original residents.

History of Shiroi Environment School

The Shiroi Environment School was created by citizens who were interested in community development. When they learned about the devastated state of satoyama while studying their own environment, they started to wonder what they could do about it. A priest at a temple, where one of them stopped by to use the restroom told them how the original residents were also concerned about the environment, and this incident led to a series of conversations between the new and old residents. Table 1 shows the chronology of their activities, which first started as environment education and citizens networking events designed for urban residents. Later, the range of activities widened to farming technique seminars and tractor driving seminars, as well as weeding of abandoned farmland, assisting with farm work in a busy season, and supporting new farmers. The areas of satoyama and farmland where the Shiroi Environment School operates have been getting larger, and so has the number of landowners. This tells us that the local residents recognize and trust the School.

Table1 The Chronology of Shiroi Environmental School						
Year	Activity	No/Member	Size of field		No/owner(satoyama)	No/owner(farm land)
			Satoya	farm land		
2000	Watching surrounding	17			[	
	Class for surrounding conservation					
2001	NPO established	47	0.3		1	
	Satoyama conservation					
	Environmental Education					
2002	Satoyama project(City gov)	65	2.3		9	
	Waste map(City gov)					
	Exhibition of pictures of Satoyama					
2003	Save title project	71	4.3		11	
2004	Coal project and sale	68	6		13	
2005	Support for farming	79	6.8		16	6
	Program for driving tractor					
	Open-air burning in the field					
	5th ceremony events					
2006	Program for farming technology	87	6.8	1.9	18	8
	Farming in the abandoned land					
	Program for revitalizing of abandoned land					
	Residents Exchange program in the field					
2007	Program for staff education	103	6.8	2.3	21	13
	Bamboo craft and mushroom group					
	Participation of Non cultivating farming					
2008	Start of non cultivating farming	133	7	2.5	22	19
	School of paddy field					
	Rural school for urban residents					
	Food education class					
2009	Satoyama landscape project	136	5.1	3.5	25	20
	Research project of animals in paddy field					
	Support for farming in charge					
	Support for new farmer					
	Non cultivating and ponding in paddy in winter					
2010		125	7.1	3.5	25	22

Relationship between Shiroi Environment School and Rural Community

Analysis of Shiroi's activities reveals that they play the following roles (Figure 1): satoyama management, abandoned farmland management, weeding around the rice field, assistance with farm work in a busy season, support for successors of family farming, support for new farmers, support for festival or event preparation, participation in religious ceremonies, environmental education, and food education. These are the functions that farming families and villages used to have innately and practice in everyday life, which is no longer the case nowadays. Urban residents, on the other hand, desire to be with nature.

The Shiroi Environment School has been dealing with these desires that cannot be fulfilled in urban life. As production-related work becomes increasingly diversified and complicated, farmers need assistance not only with farm work but also with weeding around the rice paddy and maintaining satoyama, where fallen leaves for composting and fuel were obtained in more than 40 years. Maintaining abandoned farmland

becomes increasingly difficult for families who have stopped farming due to old age. Less people now participate in festivals and religious ceremonies which used to be carried out by all members of the community. The Environment School is now encouraged to take part in religious ceremonies in addition to the community resource management. This indicates that the School plays a role of complementing farming or living functions of the rural community. These activities serve as link between the rural and urban residents so that real human living may be realized. This model shows how a new community is created through the collaboration of rural and urban residents.

Case Studies of Family Farm Management in Shiroy City

Mr. E is a farmer and the contact person of farmers in Local Community H where the Shiroy Environment School operates. Let us now analyze Mr. E's farm management.

Mr. E produces rice and more than 100 kinds of vegetables, and sells them directly to consumers. Mr. E, his wife, and his parents take part in the farm work. They own 1 ha of rice paddies and 1 ha of upland field, and they have been renting a 1-ha paddy and 1ha upland field. The pipe house boasts 20 ha. They have two methods of selling their produce: call sale which is popular in suburban areas and home delivery. They sell to about 200 households, 99% of them regular customers. They switched to organic farming about 15 years ago.

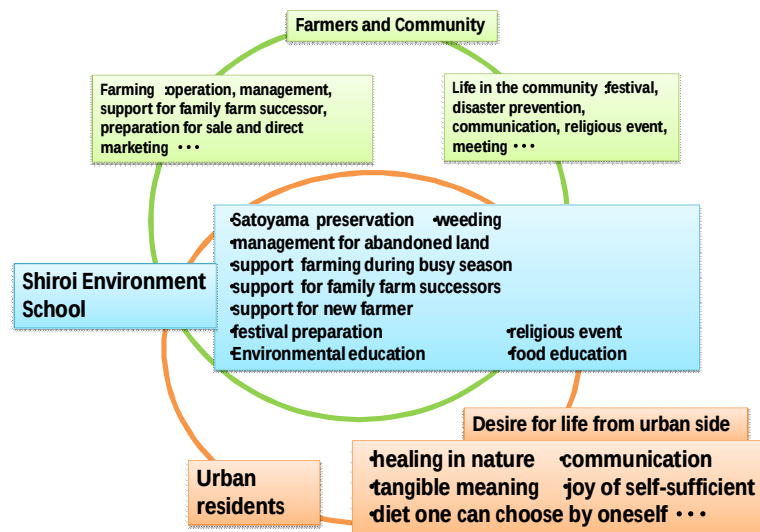


Figure 1. Relationship between Shiroy Environment School and Farmers

Table 2 shows the history of Mr. E's farm management. His father took up farming in 1945. He succeeded his father who was killed in the war. Sericulture and rice used to be the major business in this area, but farmers were starting to grow wheat, sweet potatoes, and several vegetables. In those days, sometimes a broker would come to purchase vegetables from a neighboring city, or the farmer would bring it to a market in the neighboring city using his bicycle. In the 1960s, machinery was introduced, and apartment complexes were constructed nearby. So a fixed sales destination was secured at an apartment complex in Narashino City. Mr. E's father used to go there regularly to make a living.

Mr. E was 21 when he took up farming in 1980. His first goal was large-scale farming using advanced technologies. He even dreamed of driving a very expensive car. He borrowed from the successor growth fund to make a large investment and introduce pipe house. When he got married, he started selling his produce at a different place than his father's. He was selling 20 kinds of vegetables, but because of the growing number of customers, he increased the number of vegetable varieties in order to meet the customers' demand.

Around 1990, Mr. E started to investigate no-chemical cultivation. Five years later, he switched to organic farming completely. He is now growing 70 kinds of vegetables. What made him decide to switch to organic farming was the birth of his child. Among many places he regularly visits to sell his produce is a community center. People there would often ask him to give talks on agriculture, vegetables, and food safety. There is also a lot of communication with his customers even talking about how to cook certain vegetables. He also hosts regular workshops for his home delivery customers and his child's school. They plant buckwheat seeds, observe the flowers, harvest, make soba noodles, and eat. They also catch crawfish and eels, and enjoy fireflies. The number of participants grew from 5 - 6 families to 70 people in seven years.

Mr. E's relationship with the Shiroy Environment School started around 2003 when he became a contact person of the farmers. He also coordinates the annual talkfest with family farm successors and the Environment School members, and provides farming seminars for possible new farmers among the School members. New farmers now accompany Mr. E's father to sell produce. When they are ready, they may take over this sales spot. The Environment School also helps Mr. E with his annual workshop preparation. They hold somen noodle party and BBQ at satoyama, the School's main place of operation, for Mr. E's customers.

Table2 The Chronology of M rE's fam ily farm m anagement					
Year	Fam ily's affair	Farm size	Farm style	Cultivated crop	P lace and methos for sale
				sericulture, rice	
1934	father born	paddy 1ha		rice ,wheat, sweet potato	
		upland 1ha			trader from ichikawa city
1945	grand father died		cultivating by cow	several kind of vegetable	m arket in ichikawa, matsudo
					Agriculture cooperation (rice)
1959	M rE born				
1965			tractor		direct m arketing at apartment
			raice planting machine		
1980	M rE starts farm ing			20 kinds of vegetable	
1989	M rE M arried				M rE starts direct m arketing
1990	"Leader farm er" in the prefecture				
1992	Inheritance m anagement from his father			increasing variety of vegetable	
			organic farm ing trial		
1999	First child born		organic farm in n start		
2003		lease farm land increase		70 kinds of vegetable	hom e delivery
		paddy2ha, upland 2ha			
2009		p pipe house 20a			direct m arketing (other place)
2010				100kinds of vegetable	

Relationship between farmers and urban residents

Let us look at how three generations of Mr. E's family has been involved with farming and the community (Figure 2).

Mr. E's father took over farm management immediately after the war because of his father's early death. He started growing several vegetables in addition to rice, wheat, and sweet potatoes, and carried them to markets in Ichikawa or Matsudo on his bicycle. He also secured a fixed place of sales in the Narashino Apartment Complex in the late 1960s.

Mr. E joined his father in 1980. After his marriage, Mr. E secured a sales spot for them. When they had some regular customers, they were given opportunities to talk about agriculture, vegetables, and food safety. He increased the number of crops to meet the customer demands, and the number increased from 20 to 100. When he switched to organic farming in the late 1990, the number of home deliveries went up. He has held buckwheat workshops for his customers every year, drawing as many as 70 people. His community involvement until 1990 was limited to the Local Community H in the village. After 1990, his communication with his customers began. This communication is bi-directional between rural and urban; there is a shared community which encompasses the geographical ones.

The mutual trust between Mr. E and the consumers was built when the former tackled the issue on food safety. The trust and close relationship with his customers are getting stronger now.

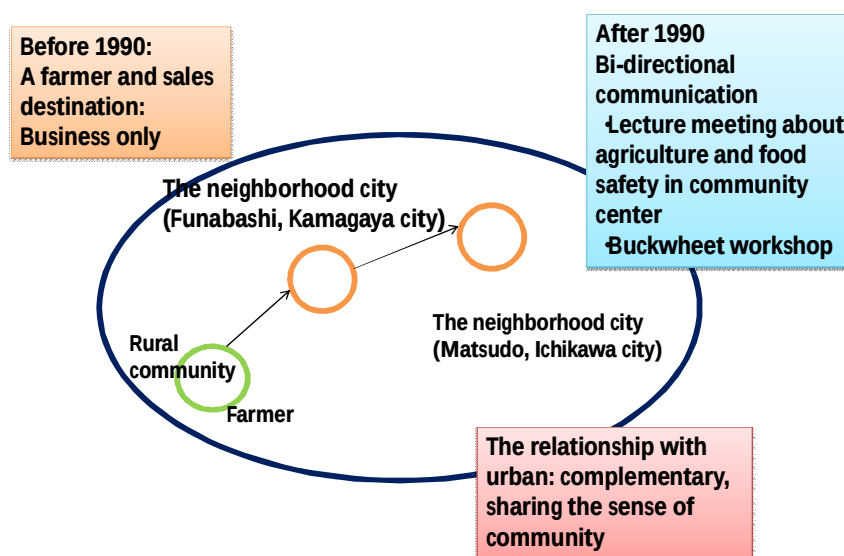


Figure 2. Relationship between the farmers and urban residents

Summary of Analysis

The above analysis can be organized into three points. First is the fact that the urban and rural residents share a common vision for community. As both groups strive to overcome their own issues and share the land physically and mentally, a new bond between the new and old residents is born. This strongly suggests the importance of the community (land) that can be shared. This is what makes it different from the producer-consumer coalitions in the past.

The second point is that the mutual complementary relationship is being formed between the urban and rural areas. To establish such a relationship through food and farming may help each society to deal with their own problems. For example, the rural people could recruit new farmers, secure work force for farm work and management, maintain traditional festivals, appreciate knowledge and wisdom of farming and rural culture. On the other hand, the urban people could get living time, food production technique and information, communication with different generations, and understanding of natural environment. The third point is that as the urban and rural people become mutually connected and with their collaboration, a new community that includes the urban and the rural is formed.

Conclusion-Citizen Farming's Role in the New Community Formation –

It is clear from the case study analysis that the sense of the community has been changing for both urban and rural residents. The problem consciousness of food and living is now shared, and the trust relationship based on close communication is being formed to solve the problems. When there is a strong bond of sympathy and trust regarding something indispensable as food, a new community can be formed. What makes it different from the producer-consumer coalition in the past is that it is a connection of individuals with an awareness of one's food and living, and the particular community, land, and place from which one came from. How can we use the local resources for producing food that would sustain our life? How can we renew and continue to use the local resources? To establish the circulation of economy, people, and things for this purpose is the challenge of the local food system including the citizen farming. When the rural and urban people work together in the local food system, a new, wide community that encompasses the rural and urban areas will be formed.

References

- Akira Ono, 2005. *SansonKankyoushakaigakuJyosetsu*, Tokyo. NouBunKyo.
- Kloppenborg, Jack, Jr. John Hendrickson, and G.W. Stevenson. 1996. "Coming into the foodshed" *Agriculture and Human Value*, 13-3(summer), pp.33-42
- Mima Nishiyama and Aya Hirata Kimura. 2005. "Alternative Agro-food Movement in Contemporary Japan". *The Technical Bulletin of Faculty of horticulture, Chiba University*, No.59, pp.85-96
- Mima Nishiyama, Shinpei Shimoura, Shinichi Kuyrihara, Atsushi Maruyama, Makito Hirose and Tomoyoshi Matsuda. 2007. "The Analysis of Consumers' Interests for Construction of Local Agri-food System". *The Japanese Journal of farm management*. No.45-2, pp.141-146

The Constructive Conflict Management Strategy: The Lesson from Rural Development Project of Thailand Government, A Case of Naresuan State University and Local Administrative Organization¹

Kammales Photikanit

M.A. Student, School of Peace,
Royal Roads University, Canada
and Researcher, Naresuan University
Phitsanulok, Thailand
kammales007@hotmail.com

Patcharin Sirasoontorn

Associate Professor
Faculty of Social Science
Naresuan University
Phitsanulok, Thailand
patcharins76@hotmail.com

Abstract

The Thailand government has been implementing numerous development projects. These projects could either bring constructive or destructive effects to the local communities. While the major intention of these projects is to improve the quality of human life, there were instances that these projects have shown negative effects, particularly in creating conflicts among the stakeholders concerned. There seemed to be no stakeholder participation as regards the planning and design of these projects.

Unfortunately, the government often handles these conflicts using compromised methods that oftentimes, focus on the economic dimension only, without regarding the interrelationships of other factors. With this, the people often perceive the inequality in terms of power and authority. In most cases, the stakeholders and the government end up in conflicts and violence.

“How to settle the problems in a most peaceful way? How to transform the violent atmosphere to a more friendly and collaborative atmosphere? These were the challenging questions that still await for the answers. This paper highlights the answers to these challenging questions.

¹ This paper is part of the major research project for a Master Degree, Conflict Analysis and Management Program, Royal Roads University, CANADA.

Introduction

Most people equate “development projects” to modernization, civilization, and the improvement of the quality of life. There are those, however, who also perceive development projects as the creator of conflicts. There have been a number of megaprojects that were implemented which have also caused conflicts at all levels worldwide. A classic example of this is the construction of dams. While the construction of dams aims to improve the quality of life, manage flood waters, harness water as hydropower, ensure supply of water, and provide electricity, if these are built without proper planning and social preparations, it would lead to the impoverishment of many villagers.

The World Commission on Dams (2000) studied the impact from building dams in eight case studies around the world² found that many local people surrounding the dam had to move to other places and faced the impoverishment. Consequently, their ways of life had been changed, reparations emerged, and the adverse health and livelihood outcomes from the environmental destruction were commonly found. This situation led to social disruption in the long-term (The World Commission on Dams, 2000).

The construction of educational institutes is another outstanding example of how the government’s mega-project created impacts on the lives of the local people. These state mega-projects aimed to expand the education opportunities and to distribute the progress into the upcountry area. In fact, these projects led to both positive and negative impacts to the lives of the surrounding people. Major roots of social impact and conflict between the particular community and government organizations emerged from an inequality of power/authority in terms of the ignorance of the state government regarding the public participation in the planning and project proceedings (Boonyachatra, 2003, Buason, 2007, Chantarasomsak, 2004, Ngow, 2000, Wattana 2004 and Sirasoonthorn, 2008).

In the case of Naresuan University, there have been sociocultural projects along modernization, urbanization and social change that have been implemented without the participation of the stakeholders. Numerous studies confirmed that the difference of perspective of the two agents produced impacts to the policy and strategy in several ways (Patmasiriwat, 2004, Wattana 2004, Sirasoonthorn, 2008). Many university projects such as construction of facilities, traffic regulations, university hospital, and road blocking during graduation ceremonies were observed to have ignored the local needs. These issues only point to the fact that there is an inequality of power between the university and the local people. The lack of public communication between the community and the university did not only create misunderstanding, but more importantly, it has created distrust between the two groups. The conflict management

² 1.) Aslantas dam, Ceyhan River Basin, Turkey, 2.) Glomma-Lågen Basin, Norway, 3.) Grand Coulee dam, Columbia River, United States/Canada, 4.) Kariba dam, Zambezi River, Zambia/Zimbabwe, 5.) Pak Mun dam, Mun-Mekong River Basin, Thailand, 6.) Tarbela dam, Indus River Basin, Pakistan, 7.) Tucuruí dam, Tocantins River, Brazil, and Gariep; and 8.) Vanderkloof dams, Orange River, South Africa).

strategy widely used is the use of civil inattention or public avoidance. By doing this, confrontations, brawling, and hidden violence were established.

A number of factors contribute to conflict as a result of inequality of power. According to Dahrendorf (1959), an equality of authority through the distribution of power in group conflict constructed social stratification which brings about conflict because of unequal sharing of resources and even interests. In the case of Naresuan University and Taphoe Community, the inequality of power has led to misunderstanding, distrust, and dehumanization. The social and educational status divided the people into two classes: the rulers and the passive controllers.

This paper argues that culture is a tool that helps people to learn about the differences and similarities. This idea of the researcher was also supported by the study of Teerikangas and Hawk (2002) and Garza and Fernandez (2003).

Purpose of the Study

This paper aims to: a) analyze the conflict situation between villagers and government officers through Peter Checkland's (1999) Soft Systems Methodology (SSM); b) identify the practical method that is best suited for government officers involved in conflict situations; c) investigate various perspectives and the interconnection between different viewpoints; and, d) summarize the body of knowledge of best practices and lessons learned from the case study.

Methodology

This research was a mixed-methodological research. It included qualitative methodological and documentary research. Using a documentary research, the researcher was able to develop the conceptual framework. The qualitative methods of research were adopted to describe the dynamics of a conflict situation and to investigate an alternative way to manage future conflict. These qualitative methods include survey, in-depth interviews, participant observation, and focus group discussion. To enlarge the communication channel and to search for the root of the conflict, Peter Checkland (1981), Soft Systems Methodology (SSM) was used as an alternative conflict analysis and management strategy and tool.

The target areas/communities were selected using purposive sampling. The communities which are within the 1.5 kilometer distance from the Naresuan University was the basic consideration in the site selection. These communities include Taphoe, Ban Khaek and Klong Nong Lek. Using the snowball sampling, 40 individuals were selected as the key informants. Among the criteria used in the selection of key informants are: a) Those actors who were actively involved in the conflict situations and provided impacts to the resolutions since the establishment of Naresuan University in 1990; b) the representatives of community such as the executive officers of Tambon administrative organization (TAOs), community leaders and senior villagers who had been living in the target communities more than 10 years; c) the university officers such as the executive officers of Naresuan University, students, alumni, lecturers, and the

university staff and, d) all of these key informants were between 20-60 years old, willing to participate in the study process, had no physical limitations of hearing and understanding.

Peter Checkland's (1999) Soft Systems Methodology (SSM) was used to address the three major goals of the research. The *First major research goal* is understanding the conflict situation. An initial analysis of the conflict situation was made by building up the holistic view from the participants. A documentary research was used to find out the history and impacts of the conflict between the Taphoe community and the Naresuan University. Qualitative methods such as participatory observation and in-depth interview had been applied to key informants of both groups. These processes were considered as the initial analysis procedure of Stage One and Two of SSM. The *Second major research goal* is to analyse the root of conflict. Stages Three and Four of SSM were applied through the brainstorming or discussion procedures. Then, root definitions of the relevant system and conceptual model were the synthesis from each perspective's participants. It had been systemized for searching the similar outputs by the researcher based on the participants' agreement. *Third major research goal* was to present an alternative strategy for conflict management. The participants got a chance to reconsider the conceptual model gathered from the earlier stages to construct the appropriate solution and presented an alternative strategy for conflict management based on the participants' mutual agreement. The brainstorming or discussion procedures had been stilled the major methods through Stage Five to Seven of SSM. In addition, the researcher used triangulation to check the validity of data and apply the content analysis.

Findings

First major research goal: understanding the conflict situation

Taphoe Community is an old community, which is located in Taphoe Sub-district, Phitsanulok Province for more than 100 years. It is comprised of ten villages that are governed by Taphoe sub-district administrative organization. Most of the area is plain, and are intended for agricultural activities such as orchard establishment and rice production. The Taphoe community's ways of life are based on Thai's rural culture.

The Naresuan University is located at the heart of the Taphoe community. As a result, modernization, urbanization, civilization, and capitalism were brought into the community. Some younger residents have gained financial benefits from these changes. However, these changes brought about a number of issues and conflicts among the community members. These issues include the land claim/use, economic issues, environmental issues, and the changing lifestyles. While community meetings and forums have been organized to resolve the problems, the conflict still remains.

History and Changes

In 1977, the fourth national economic and social development plan focused on the growth-only development model. These brought about the development policy and strategy based on modernization and urbanization throughout the country. This tendency introduced dramatic changes in human resource development, especially those in the educational plan. During that period, the Thai government emphasized the expansion of education to each region of Thailand, including Phitsanulok. Naresuan University first originated in the heart of the city center. The main campus was first located close to the Airport, the military camp, the hospitals, shopping center, the market places, and the bus terminal. During that time, Taphoe Community remained a rural community. Most of the residents were farmers and unskilled laborers.

Originally, the relationship between the city campus and surrounding urban community was good. During that time, Phitsanulok had not been announced as the “gate to Indochina”. Therefore, the introduction of Naresuan University which originated as a branch of Srinakharinwirot University created a good relationship with the local residents. Most of the citizens were very optimistic and receptive about the establishment of the university. The favorable relationship between the university and the community is evidenced by a number of collaborative activities of the university and other organizations within the communities.

In 1990, the university was reorganized under the name of the great king of Thailand, King Naresuan. The dramatic growth of Naresuan University during the period of 1967 to 1990 was incredible. The university had a good reputation both in its academic area and social services. This paved the way for the University expansion.

However, the limitations of the city campus were enormous. These included insufficient space and a lack of infrastructure and crucial facilities. Therefore, in 1992, Prof. Dr. Sujin Jinahyon, the university president, accompanied by the agreement of the university committee decided to expand the campus to the Taphoe area.

The process of resettlement was very complicated. Lots of conflicts were found. These conflicts occurred in various dimensions. They were found among the university staff themselves and between the university staff and local residents in surrounding areas.

Conflict Sphere

There were three villages faced with the direct impacts of high intensity conflicts with the university. The villagers’ dissatisfaction and distrust led to the cumulative conflict situation. These villages were Taphoe, Ban Khaek, and Klong Nong Lek villages. To provide a crystal picture of these situations, the researcher categorized conflict issues following the context in each area based on the circle of conflict, as follows.

Taphoe Community

Most of the villagers stated that lands claimed/used had been the major cause of conflict and changes. They believed that the establishment of Naresuan University brought about consumerism. The limitations of resources such as land profit speculation and land rights were the cause of land preemption.

Lack of preparation of local residents and the transfer of land rights from the local villagers to outsiders were commonly found. This change produced a new form of social characteristics that combined two ways of life among the community members. One was the traditional way of life that relied on agriculture activities. The other was the modern way of life based on service and business activities. The alteration was obviously seen in terms of crowded residence, small local stores, pubs, and restaurants in the inner circle of the surrounding area. Meanwhile, the communities more than 1.5 kilometers from the university center remained as agriculture plantation and rice field.

Ban Khaek Community

The conflict of beneficial interest from the dormitory was the topmost concern of the Ban Khaek's villagers. They believed that the performance of a private dormitory outside the campus without proper planning was the major cause of negative changes. This study found that the price of land increased around three to five million Baht per 1,600 square meters within ten years. As a result, most of the residents agreed to sell their land, change their job and change their lifestyles. Some of them became the owner of a new dormitory and vainly hoped to become rich. Others, satisfied with the quick money coming from selling their land, became temporary employees working in the university. Some villagers turned themselves to become small-scale entrepreneurs.

In 2007, the university decided to invest on its own domestic dormitory. This caused new conflicts with the local entrepreneurs. Many local dorm owners assembled to protest this project. The petition to the university was prosecuted. This event reflected "the objective reality of conflict" between the two agents.

Kong Nong Lek Community

Most villagers mentioned that the environmental problem from the waste water treatment system of Naresuan University Hospital was the major cause of water pollution in this Kong Nong Lek village. They also believed that The Medical Health Centre of Naresuan University, the departments' building, and dormitories were the first priority of trouble to be blamed.

The researcher found that the low capacity for waste water management was the main culprit. Although the waste water come from various sources, it was difficult to deny the university's responsibility. In 2008, the environmental impact assessment, under the first cooperation between the university and Taphoe sub-district administrative organization started. The joint-committee was established. This committee revealed the facts about the village's long term suspicions.

Nonetheless, not much public communication between related counterparts was made about these matters. As a result, the distress increased. Finally, it escalated into conflict through misunderstanding. Strong criticism and protests by the villagers were carried out. This, followed by the lack of communication and ignorance between the two partners, created unfriendly atmosphere and distrust.

Apart from the waste water problem, the villagers added that there were four co-problems of these three villages. First, the uncontrollable numbers of newcomers came together with the urbanization. Second, was the increasing growth of the surrounding infrastructure without proper planning. Third, was the lack of public communication between the involved development actors and organizations. Last, was the lack of public consciousness and sense of belonging of local residents.

The problems of this village were varied over time. For example, during summer, dust was interfering with the living conditions of the local residents. During the rainy season, flooding and waste water are their major problems. In addition, occasional activities of the university such as graduation ceremony, agriculture fair, science exhibition and Loy Kra Tong festival disturb and interrupt the living conditions of the villagers.

Second major research goal: analysis of the root of conflict

For the stage of the diagnosis and analysis of the root of conflict, the researcher used sociological phenomenology perspective to construct a “holistic framework” for a better understanding of the conflict situation. Simultaneously, the systems thinking was applied. He realized that social impacts or the causes of conflict had been influenced by the social system and sub-system. The researcher synthesized the data and the roots of conflict had been presented as follows:

Policy and Plan (Structural conflict)

The government policy

At the beginning of Naresuan University’s relocation to Taphoe Community, there were various government organizations and plans of Thai government organizations. Numerous actors were involved in these processes. For example, the urbanization development of the fourth national economic and social development plan of Thailand, especially that concerning the education area led to an expanding policy of higher education of the Ministry of Education.

The overlapping of power/authority was common among local government organizations such as the Regional Irrigation Office 3. Phitsanulok Province, which holds the authority for considering and approving land rights in this area was also included in development process. Taphoe sub-district administrative organization also had authority to control and check the outsiders’ project proceedings.

As a result, repetition and duplications of development plan and activities of these organizations created lots of complicated conflict situations in this area. The above instances indicated that the state government project based on the centralization policy created many impacts on the local people. Using the power/authority in command, the top-down style of the government policy was transferred to this local area. These policies also pointed out to their requirements and their benefits without the people's participatory management as well as good preparation planning.

Thus, the muddle in the chain of command of the government policies and plans included the overlapping of power/authority created conflicts in the three layers of Thai administrative structure. There were the central or national administration, the provincial administration, and local administration as well as the local people.

The university policy

The university establishment and construction contributed many impacts and conflicts to the local people. The roots of conflict emerged in the forms of the conflict of land rights, the expropriation by the government policy, and the university construction proceeding without the people's participation as well as the preparation planning.

Moreover, the university activities at special occasions contributed to the roots of conflicts in the form of inaccurately giving information to the local residents. Frustrations among the university staff were found in terms of socio-economic and environmental problems.

These social phenomena brought about various problems and contributed to the new data of local residents' interpretation in the form of misunderstanding, insecurity in living, and mistrust in terms of the deep roots of conflict which had been impressed in the local residents' perspectives.

Social phenomenon

The movement of Naresuan University to "Tung Nong Aor-Pak Klong Jig" in 1990 was the major cause of social change in Taphoe Community. The university prepared many constructions, crowded areas, and various activities. Thus, the establishment of the university became a part of the former community. These developments unavoidably impacted on the social conditions and the ways of life of the local residents of Taphoe Community. For example, the changing ways of life was found in the transformation of the traditional way of life based on the pastoral, to urbanization based on capitalism and consumerism.

After 1990, Taphoe Community had been extremely changed. It brought about massive immigration to this community. These newcomers included new students, lecturers, university officers, employees, labours, and entrepreneurs. Within 10 years, the number of newcomers had increased more than the permanent residents by around 70%.

These changes contributed to two new social conditions: the traditional ways of life based on the agricultural activities and the modern ways of life related to the university activities and the commerce. For example, the construction of internet cafes and coffee shops unintentionally created the feeling of inequality between local teenagers and students. Moreover, the new lifestyle differentiated the primary way of life of local people and university residents. These changes increased the growth of the local economy with less involvement of local investors. Inequality and prejudice were found.

Social change

After a long time of development, different livelihood and the living activities between native residents and newcomers have become an additional root cause of conflicts. The socio-cultural gap between the two groups grew. The group of university residents connected to each other via similar educational, economic, and social background. The group of community villagers shared similar livelihood, social status, and social background. The social changes of the two groups have enlarged the gap between the two as well as among themselves. Today, changes in social structure are found among local villagers in various forms as follows:

- change of family size and type from extended family to single family;
- changes of relationship among the family members from an informal style of two-way communication, to a more formal one-way communication;
- change in the average income from approximately 5000-8000Baht to 10000-12000Baht
- change in lifestyles from staying at home watching television to a more outgoing lifestyles (e.g. shopping)
- change of transportation and travelling from walking and riding a motorbike to the use of public transportation. Today, the private company is running a mini-bus transferring passengers to and from the city daily
- changes in health care and self-treatment from buying medicine in nearby drugstore to a medical service from Buddha chinarach Hospital and Naresuan Hospital
- changes in the lifestyle from peasantry to a more semi-residential way of business entrepreneurs

Apart of changes occurring to the villagers, changes were also observed among the university staff. This study found that more than 65% of the university staff has an urban background. Moving to this area, these university residents carry with them the middle class background.

Public communication and public space

The water pollution represented the major root of conflict. The lack of public communication and public space was one of the most important problems in Taphoe community. It intensely and affected the environment surrounding the university. This problem had two major causes.

First, it was the external cause. These causes came from many private dormitories, shops, and restaurants. After 1990, the urbanization had been increased. Many of entrepreneurs invested in many business activities that support the community expansion. These were the apartments, dormitories, grocery shops, internet cafes, restaurants, coffee shops, pubs, and bars. Without the proper city plan, the waste water and pollutants had been discharged directly or indirectly into Kolng Nong Lek without adequate treatment to prevent harmful to the residents.

Second, it was the internal cause. The university's buildings and dormitories, especially Naresuan University Hospital and The Medical Health Centre of Naresuan University had also been a major cause of conflict as mentioned by the local residents. The senior university staff stated that on average the waste water released daily was approximately 1,190 cubic meters per day. Some villagers accused that the water pollution had been released of waste products and contaminants into surface runoff into river drainage systems, leaching into groundwater, liquid spills, wastewater discharges, and littering. This information needed to be scientifically proved.

In 2005–2006, this problem escalated the conflict with local residents. Distress was found in the form of the complaint letter sent to the provincial governor. However, the channel of communication still remained close. An atmosphere of misunderstanding was found among local residents. Afterwards, it was found that the university waste water treatment system had been damaged for a period. Although some university lecturers stated that the system was fixed, the disappointment from villagers was enormous. The distrust of the villagers led to conflicts in the succeeding period.

The university and local administrative organizations cooperated in programs launched for resolving this problem through the joint committee that was formed in 2008. However, more organizations and development actors needed to be more involved. Lack of monitoring, budgeting and trolling systems was the major obstacle up to this point.

In addition, the uncontrollable newcomers came together with the urbanization. The increasing growth of the surrounding infrastructure without proper planning, the lack of public communication between the development actors and organizations, and the lack of public consciousness and sense of belonging of local residents were all significant roots of conflict. These indicated social problems which were in the forms of the crowd, crime, traffic jam, and flooding. These problems reflected the ineffective resolution of all participants.

The problems of this village varied across time. Distrust and frustration were exhibited in both agents' perspectives. This may be in the form of humanization, silences, and aggressive behaviours. The boredom felt in the problem emerged as opposite as the intense of conflict had been increased. Ignorance and the civil inattention or public avoidance was applied as a conflict strategy between the two agents.

These strategies were not directed to the joint resolution. It just hid the problems below the surface. This study found that the communications between the two were closed and the collaborative atmosphere was locked. The insecurity, distrust, and frustration remained.

Prejudices and cultural differences

For more than 20 years of the establishment of Naresuan University, the demographic characteristics of the community had increasingly changed. It brought about new constructions and building expanding within the university and surrounding the community. These constructions produced new form of supportive activities such as the educational activities, the student affair activities, the university activities, and the diary life activities of local residents. Simultaneously, land used had been decreased as well as land rights. The cultivating area had been changed to the business area such as the dormitories and shopping malls. Furthermore, the new constructions and buildings was dramatically increased the cost of living.

Approximately 200 private dormitories surrounding the university area confirmed the conflict of interest. This construction plan had been increasing since 1990. Approximately 65% of the university students were domiciled in lower northern Thailand. Only 25% were the native students of Phitsanulok province. About 70% of total students were forced to live in the university dormitories. The rest were living in private dormitories outside the university. Moreover, 70% of the university lecturers and staff immigrated to the surrounding community. The limitations of the university dormitory such as the oldness, narrowness, and insufficient infrastructure facilities provided frustration to university students. The growth of property business increased the number of dormitory to 60% during the last 10 years.

In 2006, the university announced the new university dormitory construction plan. Without the public hearing, the construction led to the ambiguity felt among local and outsider entrepreneurs. The uncertainty in beneficial sharing was the conflict's output. The mistrust and misunderstanding was the conflict's outcomes in the following time. This was the beginning point of the conflict of interest between two agents. In 2007, the conflict was extremely escalated after the university officially opened the university dormitory. This emphasized the fact of displeased of inequality of the beneficial sharing between the two agents. This situation was terribly extended after the aggressive behaviors of villagers were presented through the protesting. The complaint letter and mass media announcement had been sent to the university boards and so too the provincial governor. Today, these conflicts remained unsolved. The competitive atmosphere was still very strong.

Third major research goal: present an alternative strategy for conflict management

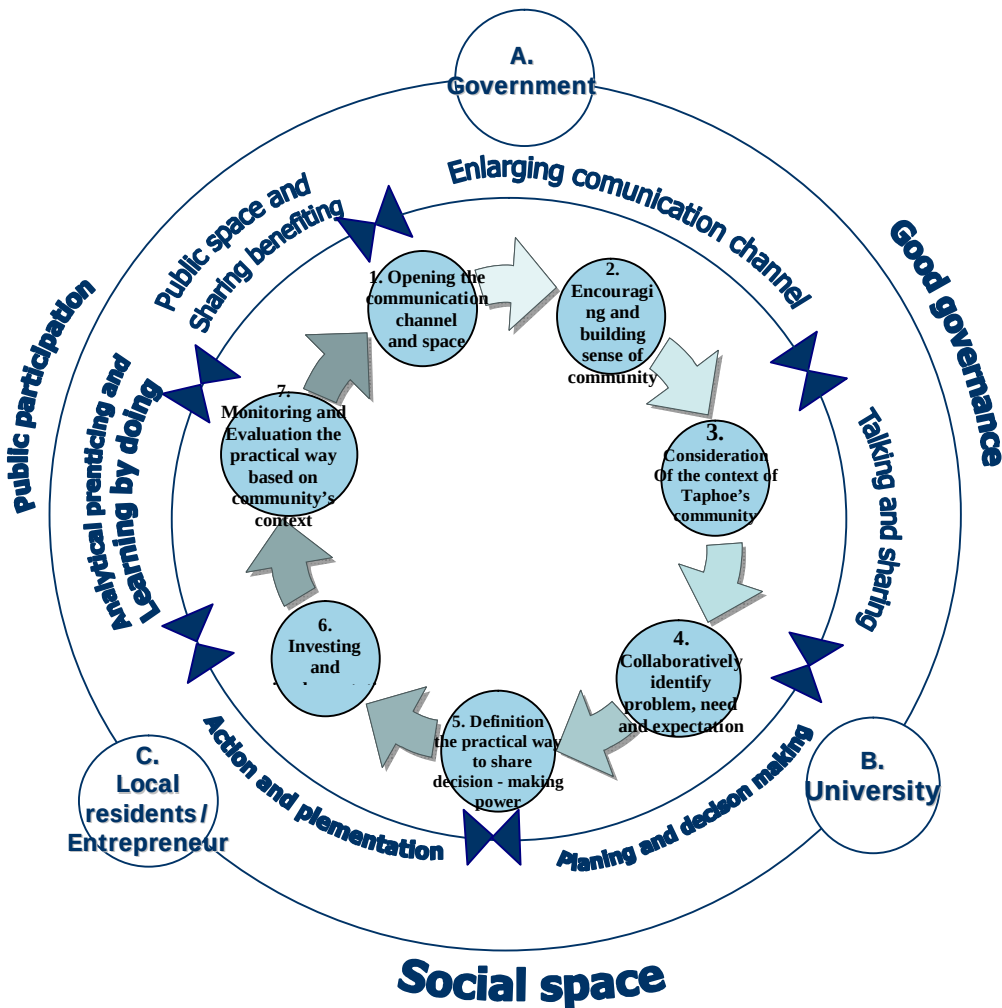
Previously, the state, provincial, local government and the university exercised their power to solve the problem. Therefore, it is necessary to open space for all participants to participate in community planning which was the core conflict resolution. This communication channel includes creating social spaces of meeting, group discussion, public forum and public dialogue. The space was comprised not only of the personal space of neighborhood of clan network, but also the social space of cultural activities and ritual ceremonies such as funerals, weddings or New Year ceremonies. This involves making new form of public space such as community and university forum. All counterparts experience a culture of partnership by exercising the behaviour of sharing and giving instead of the culture of inequality. Opening the communication channel and space helps an integration of diversity. All participants are able to build a strong sense of ownership and public consciousness. Considering Thai culture of informality and personal relationship, more communication and space leads to a new form of relationship among the two counterparts.

However, it seems that the university officers so far remain in their traditional relationship. Formal communication and short-term relationship is the most preferable practice. The villagers, in contrast, seem to have more willingness to change to a more formal discussion. They have more social interaction with the university officers and other government staff. They increase interactions and sharing information with the other in a more informal way. The community forum brings the university academic project such as the mobile unit project and research projects. Indeed, it is the community who is ready for changes.

To resolve conflicts, local people tend to focus on the contradictions in the positions problem, values, and interests rather than the whole system of the conflict situation. The university, on the other hand seems to spend more time talking. The researcher thus, emphasized the process for getting the two participants for more sharing, and learning. This is an active process by which beneficiary or vulnerable groups influenced the direction and implementation of the community development based on self – reliance and empowerment.

This seems that the community empowerment process based on the recognition of differences among social classes and culture becomes an alternative of this research finding. During the study, the researcher found that the strength of partnership was highlighted. The opening of communication channels between the disputants were deliberately sought and respected. At the end of the day, the participatory community development plan came up based on the participant's consensus.

Finally, the researcher and the participants combined an agenda of possible change by adopting the conceptual model based on the participant agreement of all actors and organizations as follows;



In addition, the state, provincial, and local government play equal roles as facilitators and supporters. The university plays a crucial role as academic mentors in order to share decision-making power; increase the communication channel; enlarge public participant; empower the academic knowledge; and strengthen learning system.

By doing this, all participants equally and democratically participate and share their ideas, scenarios, visions, and responsibility to conduct and to implement development projects. The friendly atmosphere emerged through the collaborative process. Community development plan becomes a major compass to sustainable development. It increases an effective agenda for conflict management.

Conclusion

The analysis and diagnosis of the root of conflict and conflict resolution demonstrated that SSM is an energetic conflict management tool. Applying SSM is an effective strategy to combine the different perspectives of the participants. The technique helps encourage the participants to share their thoughts in order to diagnose the conflict presented. The opening of communication channels creates a collaborative atmosphere for thinking and working together as a team. Formal discussions among participants also created the initiation of the trust building process. These participants learn to be a part of each other as a working team. These indicate the sense of community ownership developing for all members through the 7 stages of SSM.

To avoid resistance, the collaborative community development plan should be highlighted through the holistic view of the participant perspective. The friendship and collaborative atmosphere were the empirical factors for conflict management. The collaborative work created trust among participants. It allowed the groups to share their thoughts. Therefore, studying and working as a team provided opportunities to accept the differences and to share the similarities. Using the brainstorming technique provided a culture of respect. These offered chances to open, share, and expand thoughts amongst the development actors. More communication channels increased opportunities and choices among development actors for considering the problem situation. This new environment offered an alternative way to solve the problem.

Recommendations

To live together in a complex society, the two partners had more experiences to share than conflicts to challenge. The application of SSM extended the systematic thinking and sharing experiences of the partners. The cultural diversity thus became an advantage. It provided the two agencies benefits from their differences. The researcher recognized that a more open communication channel offered a better understanding and acceptance among people. By doing this, the conflict was no longer labeled 'destructive'. It created a constructive result by empowering community development as well as eventually strengthening the community.

References

- Brenton, K. 2007. "Using Soft Systems Methodology to Examine Communication Difficulties" *Mental Heath Practice*, 10(5).
<http://www.coba.unr.edu/faculty/kuechler/788/softsyscommdifficulties.pdf> (June 8, 2008).
- Boonyachut, Supawadee, and colleagues. 2003. "Effect of University Establishment to Surrounding Community". *Journal of The National Research Council of Thailand*, www.riclib.nrct.go.th/jnrct/pdf/35-2-5.pdf (January 16, 2009).
- Buason, Rattana, and colleagues. 2007. "*The Past, The Present, and The Future of Ban Kage Community, Faculty of Education*". Naresuan University, Phitsanulok

- Chantarasomsak, San. 2004. "Social Development Sustainable: Taphoe Community and Naresuan University". "Social Capital and Culture Capital in Economic System and Modern Management". *"The article from Annual 2004 Academic Conference"*. Naresuan University, Phitsanulok
- Checkland, Peter. 1999. *Systems Thinking, Systems Practice. Includes a thirty year retrospective. Systems Research and Behavioral Science*. West Sussex: John Wiley&Sons, LTD
- Checkland, Peter. 2000. *Soft systems methodology: A thirty year retrospective*. "Systems Research and Behavioral Science, Vol. 17, No. S1
- Dahrendorf, R., 1959. *Class and class conflict in industrial society*. Stanford, CA: Stanford University Press.
- Garza, Matha P. and Agustin D. Fernandez. 2003. *Application of a Systems Methodology in the Diagnosis of the Organizational Culture in the Telecommunications Company*. International Journal of Computers, Systems and Signals. Vol. 4, No.1., 22 – 32.
- Ngow, Boonchai. 2000. *"Development guidelines for the south - west suburb of Phitsanulok due to the expansion of Naresuan University"*. Faculty of Architecture, Chulalongkorn University, Bangkok, Thailand
- Sirasoonthorn, Patcharin and colleagues. 2008. *"Social Impact Assessment: A Case of Medical Health Centre of Naresuan University, Lower Northern Part of Thailand, Faculty of Medical"*. Naresuan University, Phitsanulok
- The World Commission on Dams. 2000. "Dams and Development: A New Framework for Decision-Making". *"The Report of the World Commission on Dams"*
- The World Commission on Dams. 2000. "WCD Case Study, The Pak Mun Dam in Mekong River Basin, Thailand". *"The Report of the World Commission on Dams"*
- The World Commission on Dams. 1999. "WCD Case Studies, Tucuruí Hydro-Power Complex (Brazil), World Commission on Dams Secretariat, Vlaeberg, Cape Town , South Africa". *"The Report of the World Commission on Dams"*
- The World Commission on Dams. 2000. "WCD Case Study, The Glomma and Laagen River, Basin in Norway". *"The Norwegian Institute for Nature Research, The Eastern Norway Research Institute and the Glommens and Lågens, and The Glommens and Lågens Brukseierforening"*.
- The World Commission on Dams. 2000. "WCD Case Study, Pakistan: The Tarbela Dam and Indus River Basin, Tarbela Dam and related aspects of the Indus River Basin, Pakistan". *"Asianics Agro-Dev. International (Pvt) Ltd., Isamabad, Pakistan"*
- The World Commission on Dams. 2000. "WCD Case Study, Turkey Case Study: Aslantas Dam / Ceyhan River Basin, Aslantas Dam and related aspects of the Ceyhan River Basin Turkey". *"The Report of the World Commission on Dams"*
- The World Commission on Dams. 2000. "WCD Case Study, Grand Coulee Dam and the Columbia Basin Project USA, Leonard Ortolano, Stanford University, Katherine Kao Cushing". *"University of California, Berkeley, and Contributing Authors"*

The Constructive Conflict Management Strategy: The Lesson from Rural Development Project of Thailand Government, A Case of Naresuan State University and Local Administrative Organization

The World Commission on Dams. 2000. "WCD Case Study, Kariba Dam-Zambezi River Basin".
"Soils Incorporated (Pvt) Ltd, Harare, Zimbabwe in association with Chalo Environmental
& Sustainable Development Consultants, Lusaka, Zambia"

Wattana, Rangsan. 2003. "The diary of Naresuan University". *"Puttanasuksa Publishing"*
Bangkok

Impacts of Peace-Building Initiatives to Rural Development in Mountain Province, Philippines

Annie Grail F. Ekid

Mountain Province State Polytechnic College
Bontoc, Mountain Province
ekidanniegrail@yahoo.com

Abstract

The study sought to determine the peace-building initiatives in Mountain Province, Philippines. Specifically, this study probed the peace-constituency building, conflict reduction efforts, conflict settlement efforts, government's peace efforts, peace research, and social development work. It also determined the key players, factors and impacts of peace-building initiatives in Mountain Province. The study used a descriptive qualitative approach. Data were sourced from key informants, government documents such as PPOC documents, police blotters, archival records of organizations involved in peace-building, and news clippings. Data gathered on peace-building initiatives in Mountain Province show a discernable trend on the peace efforts of the province which takes-off from a bottom-up approach. These are mostly drawn from grassroots initiatives. Notions of peace-building are founded on the general perception that to sustain durable peace is to address the sources of conflict discontent. It also evolved out of the realization that armed response to the insurgencies does not provide a practical solution to the problem, but it is the citizens' aspirations that should prevail. Peace-building initiatives undertaken in Mountain Province cut across socio-economic, political and cultural concerns.

A significant track of peace-building mechanisms has been noted, that is, the traditional method of conflict settlements are interfaced with the evolving peace initiatives of the province. In general, a multisectoral group composed of the government, non-government, people's organizations and the church sectors, has been actively engaged in the peace-building. Such strong collaboration of organizations has stimulated a desirable peace synergy in the province. There is, however, a sparse representation of the youth sector in peace-building efforts. Extenuating factors are found to derail or mitigate the peace-building initiatives. Although contextualized on the specific peace-building activities, generally, these factors are categorized as cultural factors, political environment, economic concerns, religious influence and collaboration of a multisectoral group. Impacts of the peace-building initiatives are also context-specific. Nonetheless, there are sufficient grounds to claim that peace building initiatives have resulted to desirable outcomes.

Keywords: *peace-building, conflict resolution, traditional, impacts*

Introduction

Peace-building is a process that facilitates the establishment of durable peace and tries to prevent the recurrence of violence by addressing root causes and effects of conflict through reconciliation, institution building, and political as well as economic transformation (Boutros-Ghali, 1995). It consists of a set of physical, social, and structural initiatives that are often an integral part of post-conflict reconstruction and rehabilitation. Moving towards this sort of environment goes beyond problem solving or conflict management. Peace-building initiatives try to fix the core problems that underlie the conflict and change the patterns of interaction of the involved parties. They aim to move a given population from a condition of extreme vulnerability and dependency to one of self-sufficiency and well being (Reychler, 2001).

It should be noted at the outset that there are two distinct ways to understand peace-building. According to the United Nations (UN) document, *An Agenda for Peace* - peace-building consists of a wide range of activities associated with capacity-building, reconciliation, and societal transformation. Peace-building is a long-term process that occurs after violent conflict has slowed down or come to a halt. Thus, it is the phase of the peace process that takes place after peacemaking and peacekeeping. Many non-government organizations (NGOs) advocate that peace-building is an umbrella concept that encompasses not only long-term transformative efforts, but also peacemaking and peacekeeping. In this view, peace-building includes early warning and response efforts, violence prevention, advocacy work, civilian and military peacekeeping, military intervention, humanitarian assistance, ceasefire agreements, and the establishment of peace zones.

Mountain Province is located in the Central Cordillera, Philippines. It is bounded on the north by the provinces of Kalinga and Abra, on the east by Isabela (Region 2) and Ifugao provinces, on the south by Ifugao and Benguet provinces, and on the west by Ilocos Sur provinces. It will take about 147 kilometers or an average travel time of 6-7 hours from Baguio City to the capital town of Bontoc, Mountain Province, via the Halsema Road. Towards Lagawe, Ifugao is 70 kilometers from Bontoc with an average time of two hours. Towards Tabuk-Kalinga is about 140 kilometers with a travel time of 7 to 8 hours.

Mountain Province has two legislative districts. District One comprises the municipalities of Sadanga, Natonin, Paracelis, Barlig and Bontoc, while District Two comprises the municipalities of Sabangan, Bauko, Tadian, Besao and Sagada. The province is composed of 144 barangays with a total area of about 209,733 hectares. The Applias, Kankana-eyes, Balanagaos, Baliwon and Bontoks are the native inhabitants of Mountain Province. The Applai and Kankana-ey ethnic communities settle in the western part of the province while the Bontok tribes live predominantly in the central and northern portion of the province. The Balangaos and Baliwon are also found in the eastern portion of the province. (*Kapayapaan Gabay sa Pagunlad ng Sambayanang Filipino CY 2006*). The 2007 census conducted by the National Statistics shows a total population of 148,661 in Mountain Province.

Generally, Mountain Province is characterized as a mountainous and forested province. Of its total land area, about 92% is classified as high forested mountain, which oftentimes serves as the abode of the rebels and guerillas. As such, peace and order situation of the province is very much threatened by the insurgency problems. For instance, in the early years, the strategists of the Communist Party of the Philippines (CPP)/New People's Army (NPA) envisioned the province as the center of their Butterfly Strategy, in which the Command Structure should be based in the provinces of Kalinga and Apayao as head; and the training and staging areas for guerilla formations should be based in the Mountain Province and Northern Benguet, as the body; and finally, Benguet and Baguio City as the tail; should host the Communications and Logistical lifeline to the other guerilla regions. Flowing eastward and westward are the wings of the butterfly that cover Ilocos Region and Cagayan Valley.

Crime is a second threat to the peace and order situation in Mountain Province. There has been an increasing number of children and women who are victims of violence and human trafficking. The tribal conflicts are also a common problem in the province, as it could suddenly breakout and rapidly escalate and affect the innocent victims. The tribal conflict is oftentimes complicated when insurgent groups interfere and take advantage of the situation and advance their own agenda (*Kapayapaan Gabay sa Pag-unlad ng Sambayanang Pilipino SY 2006*).

To address the peace and order issues and concerns, the provincial government of Mountain Province has employed traditional and government-initiated laws to serve as microcosm for effective peace-building measures for the indigenous people. These strategies continue to serve as stronghold for peace keeping.

In the annual search for the best Provincial Peace and Order Council (PPOC) in the Philippines, Mountain Province bagged the first place under the first to the third class provincial categories for four consecutive years (i.e. 2004, 2005, 2006 and 2007). With such outstanding performance, the province became a Hall of Fame Awardee in the government's peace program. An impressive feat, indeed, for a province, which is wracked by the sporadic tribal wars and the unprecedented breakouts of armed clashes between the military and the rebels.

In the light of these developments, a study was conducted to find out the experiences of Mountain Province in its peace-building efforts and how these initiatives contribute to the rural development in the province. This paper looks into the experiences of Mountain Province in Northern Luzon, Philippines in peace-building processes and initiatives. The Province's peace-building program has received national fame starting from the inception of the PPOC of the Philippines in all levels of government under Executive Order 309.

Leycher (2000) adds that more specifically, peace building is composed of sequential activities with a series of interconnected movements in various sectors leading from vulnerability to well-being. Ferrer (1994) cites several observations on conflict mediation in the Philippines. First, on the whole, mediation activities were largely done by internal groups. Second, local coalitions can be found undertaking all

aspects of mediation activities. Third, the development of peace movement in the Philippines has produced the overlaps in the nature and tasks of these third parties, particularly the local coalitions and institutions.

Similarly, Maise (2003) offers the view that because peace-building measures involve all levels of society and target all aspects of the state structure, they require a wide variety of agents for their implementation. These agents advance peace-building efforts by addressing functional and emotional dimensions in specified target areas, including civil society and legal institutions. While external agents can facilitate and support peace-building, ultimately it must be driven by internal forces. It cannot be imposed from the outside.

Specifically, this study was carried out to answer the following questions: 1) What peace building initiatives are undertaken along the community levels of Mountain Province on the following areas: peace-constituency building, conflict reduction efforts, conflict settlement efforts, peace research and training programs, and social development work? 2) what factors affect the implementation of peace-building initiatives in Mountain Province? 3) how do these peace-building initiatives create an impact to rural development in Mountain Province?

Methodology

The study was limited to the following concerns: a) the peace-building initiatives in Mountain Province, the key players in peace-building, b) the factors which affect the implementation of these peace building activities, and c) their impact to rural development. Peace-building is multidimensional and multisectoral embracing the social, environmental, and feminist concerns. The study was limited to activities undertaken by government and NGOs which are bounded within an explicit framework. The said framework has the common end of seeking peace, not only the absence of war, but the presence of social justice.

The study used a case study method. The data were gathered using primary and secondary data gathering. Primary data were obtained from the key informants using interview and focus group discussions, while government documents, minutes of meetings, news archives about the conflicts in Mountain Province, and published studies were used as secondary sources of information. Available documents using content analysis were used to extricate the factors and impacts of the peace-building process in Mountain Province. Validations were done through actual observation, follow-up interviews and participation in the multisectoral peace forum.

Informal groups whose actions have led to conflict-prevention in Mountain Province, served as the key informants. These include the people who are directly and actively involved in peace-building projects from the different government agencies, NGOs and other civil society groups, particularly the Council of Elders, NGO leaders in the province, staff members of the PPOC, and lead players of the grassroots-oriented initiatives who have bonded to arrest a looming community conflict. Purposive and

snowball sampling were used in the selection of key informants representing the government and civil society groups.

Results and Discussion

Recognizing the peace-building initiatives in Mountain Province

Ferrer (1994) cites several observations on conflict mediation in the Philippines. First, on the whole, mediation activities were largely done by internal groups. Second, local coalitions can be found undertaking all aspects of mediation activities. Third, the development of peace movement in the Philippines has produced the overlaps in the nature and tasks of these third parties, particularly the local coalitions and institutions.

Mountain Province has been implementing a combination of strategies and approaches towards instituting peace-building in the province. These are as follows:

- *Community Conflict Resolution via the Council of Elders.* Because Mountain Province is being inhabited by a number of different tribes, tribal disputes on boundary, water resources and crime-related incidents are the common sources of community conflicts. These are resolved by the Council of Elders. Among the factors which found to mitigate the peace process include: (a) upholding the terms of agreement, (b) knowledge on the nuances of the process and innovations of the peace process, (c) immersion in the affected communities, (d) political and financial support, (e) active participation of multi-sectoral group, (f) presence of a core group in case settlements and, (g) the legal moorings of collecting monetary penalty.

The Sagada Peace Zone, also known as the Sagada Demilitarized Zone was launched in 1998. After the death of innocent civilians who fell prey to the skirmishes of the government forces and the NPA, the residents of Sagada unilaterally declared their community as out-of-bounds to armed conflict. Preserving the peace zone remains to be the most serious impediment as the sanctity of upholding the provisions are entirely dependent on the goodwill of the warring factions.

- *Holding of multisectoral peace forum.* Multisectoral forums are organized to help address human rights violations allegedly committed by the military. These forums provide avenues among the victims, military, Philippine National Police (PNP) and human rights advocates to address the grievances of the victims. Being convened by the church sector, the human rights advocacy and dialogue ensure neutrality in all aspects.
- *Formation of peace councils.* The formation of different peace councils also buffered the peace movement in Mountain Province. The Peace Executive Council, composed of representatives from different sectors, organize the dialogues. The Mountain Province's PPOC has consistently been adjudged as the best performing PPOC nationwide. Its strengths are attributed to the: a) favorable political leadership with a clear peace agenda, b) well-coordinated and strong partnership of

multisectoral agencies and, c) supportive community-based peace mechanisms such as the indigenous culture of settling disputes. In addition, the good information management system of the PPOC ensures that all pertinent records are consolidated and packaged and are made available for entries to the annual search of best PPOC.

- *Engaging various stakeholders in peace-building process.* In the municipality of Tadian, the involvement of the Parents Teachers Community Association (PTCA) also helps curb the rise of juvenile delinquency. Members of PTCA round up students loitering around business establishments and herd them back to schools. In Sabangan municipality, the PTCA, together with “barangay tanods” and local police team-up in enforcing municipal ordinances. Sustaining volunteers’ interest, attitude of community members, and the political will are among the vital considerations in peace campaigns of the different municipalities in Mountain Province

Religious groups contribute to social healing by conducting bible studies and prayer services to the inmates at the Provincial Bilibid prison. Lack of basic necessities, nonetheless, is a primordial factor which impinges on the inmates’ search for inner peace.

These strategies validate the contention of Maise (2003) that because peace-building measures involve all levels of society and target all aspects of the state structure, they require a wide variety of agents for their implementation. These agents advance peace-building efforts by addressing functional and emotional dimensions in specified target areas, including civil society and legal institutions. While external agents can facilitate and support peace-building, ultimately it must be driven by internal forces, and should not be imposed by the outsiders.

- *Promoting volunteerism and cooperation.* Setting-up quick mechanisms to help the landslide victims in Kayan municipality and in other municipalities have all been employing participatory peace-building efforts. These included an array of medical, trauma and humanitarian assistance from local, national and internationally-based donors. The Igorot culture of *og-ogfo/og-ogbo*, the ability to deliver timely assistance, coupled with media publicity have been greatly beneficial in trying to give a semblance of normality to the people.

To stem the rising tide of curfew violations and liquor ban cases of the minors, the Bontoc Women’s Brigade, a civilian volunteer organization was formally organized on December 18, 2002. Media recognition, dynamic spirit of volunteerism, and the diplomatic approach of the women are among the factors that sustain the Women’s Brigade.

- *Instituting government programs on peace-building.* Under the government’s peace agenda, integrating former rebels into the mainstream society is a key to social reconciliation and healing. The Social Integration Program seeks to provide the necessary assistance and support to those who have been involved in or affected by armed hostilities to enable them to return to normal life and become productive

members of the society. It includes economic, social and psychological rehabilitation and reintegration of former combatants and civilian victims of the internal armed conflicts (CVIACs) as well as amnesty to restore the legal status of ex-rebels. Confidence-building and a fragile policy, which is subject to the priorities of the incumbent administration are eyed as important considerations to the program's implementation.

Undertaking Free and Prior Informed Consent is facilitated by the Mountain Province–National Commission on Indigenous People (NCIP), which necessitates the concurrence of community members before any development project is set up on their ancestral domains. The terms set forth by the community and the availability of the community members determine the pace of the process.

Involvement in Monitoring government projects has been a preoccupation of Social Action Development Center (SADC). It has encouraged the civilian volunteer groups to help in its monitoring activities. Maintaining the pool of volunteers, advocacy, and politics are intrusive elements to monitoring.

- *Establishing community projects* such as waterworks address the shortage of basic social services. Through the Community-Based Development Programme (CBDP) of the Episcopal Church of the Philippines, it seeks to “empower persons and people as stewards of God’s creation.” The dole-out mentality is a major hurdle for project implementers.

A survey among the local government units reveal the absence of peace research conducted by the municipalities. This implies that research on peace is not their priority. Conducting peace researches seems to be delegated to the academe, particularly the tertiary level.

Impacts of Peace-building Initiatives to Rural Development

Significant changes have been noted with the peace-building schemes enacted by the different civil groups, local and national government and the church sectors in Mountain Province. Impacts to rural development, however, are invariably context-specific on the peace-building initiative.

A discernible reduction of crime in the province

The initiatives of the civilians and the local law enforcers to peace-building resulted to a downturn of municipal ordinance violations such as curfew violations and liquor ban. Based on records, the Women’s Brigade has responded to a number of cases from 2007-2009 as shown in Table 1.

No less than the Municipal Mayor of Bontoc and the Chief of Police of Bontoc Municipal Station vouched that the peaceful situation in the central barangays of Bontoc was largely due to active support of the force multipliers. Likewise, in the municipalities of Tadian and Sabangan, residents claimed that the efforts of the PTCA

have successfully kept the children in school instead of loitering at the business establishments. Governor Maximo Dalog in his 2010 State of the Province Address (SOPA) cited the remarkable decrease in crime volume from 136 in 2008 to only 77 in 2009. He attributed this to the concerted efforts of the police, military, local officials, organizations and the community.

Table 1. Accomplishment of the Women Brigade of Bontoc with the local police from January1, 2007- Dec. 31, 2009.

Nature of Offense and/or incident	No. of cases	Actions undertaken
Liquor ban	162	Names of establishment were turned over to the Invest Section of Bontoc MPS & subsequently indorsed to the Municipal Treasury's office for proper disposition/payment of fines
Security of Commercial establishments	7	Locks of grocery establishments were checked to see that they are properly secured
Assistance to mauling incidents	8	Women Brigade responded to mauling incidents to prevent the escalation of fistfights and further physical injuries
Assistance extended to police officers in cases of direct assault filed at the barangay or proper court	9	They served as witnesses during the confrontation held at the Barangay Lupon of Poblacion, Bontoc and/or the proper court where the case is filed
Implementation of Mun. Ordinance no.9 on concealing of deadly weapons	3	During their tour of duty confiscated deadly weapons in the possession of drunks or suspicious persons
Alarm and scandal	11	They responded to alarm and scandal cases and sent home drunk or unruly persons
Physical injury	11	They responded to cases of physical injuries to both parties involved
Alleged carnapping	1	This case was turned over to the Invest Section of Bontoc Municipal Station for proper disposition
Security of properties (wallets, cellphones, monetary valuables of drunk persons)	9	These personal properties were turned over to the Invest Section of Bontoc Municipal Station for proper disposition
Attending to amicable settlements at the Barangay Lupon	5	They often serve as eye witnesses to incidents and shed light on cases like physical injuries, theft, direct assault to agents of persons in authority filed at the barangay lupon in any of the four central barangays of Bontoc
Implementation of Municipal Ordinance on Curfew of Minors	14	All apprehended minors were turned over to the Women's desk and the MSWD for proper action
Assistance to vehicular traffic accidents	3	Women Brigade members extend humanitarian assistance to victims of VTA
Implementation of Municipal Ordinance No.84, s. 2005 otherwise known as Anti-slot machine	3	Women brigade works in partnership with the Bontoc police force in the confiscation of slot machines and any similar gambling device thereby promoting the welfare of school children
Anti-gambling operation	4	Women Brigade are empowered and take active measures in curbing gambling operations in the municipality

Strengthened local capacities for peaceful negotiations

Traditional mechanisms in conflict resolutions are tried and tested means of warding - off potential conflicts and in retaining smooth relations among and between villagers. Since the local and provincial governments operate within the context of customary laws, the traditional mechanisms which are being utilized in conflict resolutions have empowered government structures in Mountain Province. The Council of Elders has gained the respect and trust of the local leaders and the community members because of their breakthroughs in resolving community fractures. They have earned their badge as peacemakers from negotiating amicable settlements, to litigating tribal conflicts.

De-escalated and resolved conflicts

Although Mountain Province is known for the erratic outbreak of tribal wars largely due to conflicts over boundary, water resources, accidents, criminal offenses, such notoriety is also outstripped by the widely-reported peaceful resolution of its tribal or community conflicts.

Lengwa (cited in <http://www.mountainprovince.net/news>) reports that when a team from the National Peace and Order Council (NPOC) visited the municipality of Bontoc in 2008, the members were presented with 18 documented and resolved cases. The cases cited are the following: Betwagan of Sadanga and Bugnay of Tinglayan, Kalinga; barangay Saclit and barangay Poblacion all of the municipality of Sadanga; and Fidelisan of Sagada and Dalican of Bontoc over land and water resources; murder-related conflict between Madacayan of natoninand Guilayon tribe of Kalinga over the death row of one Edwin Lingbawan of Natonin and Judge Milnar Lammawin of Kalinga; a forcible abduction case between Saclit of Sadanga and Tetep-an, Sagada, vehicular accident which claimed four victims along the Banuae, Ifugao and Nueva Vizcaya roads; and the assistance of the Council of Elders in arresting the 2005 Lepanto Mine Labor arrest.

Without prejudice to the efforts of the other disorganized Council of Elders operating in Mountain Province, other cases which they intervened such as the Natonin-Basao conflict and the Sabangan-Tulagao case were likewise included. Through the active involvement of the Council of Elders in conflict resolutions, community fissures were bridged. Community members are free to conduct their normal activities without being hounded by fear of possible revenge from other communities.

Enhanced negotiating power and public speaking skills

While the Sagada peace zone may be viewed as a stop-gap measure to end armed aggressions and the initial efforts of the community were to contain the conflicts, eventually it has set a climate conducive for a more comprehensive peace process. The clamor for peace mobilized the respected elders and church leaders to issue the plea for a demilitarized zone. This meant taking a unified community stand and lobbying to the top brass of the AFP. This also meant maintaining a feedback loop with the

underground at the risk of being labeled as NPA sympathizers. While doing so and winning sympathizers to their plight, the community leaders were honed to participate in forums and constant interaction with different people.

From the focal concern of community members wanting to live in peace and resume their normal lives, the peace concern was expanded and reinvented to include other municipalities of Mountain Province. As insurgency reared, another peace mechanism forayed through the formation of the Peace Executive Council. Throughout the process, peace advocates developed a sense of diplomatic tact and mediation skills in wriggling their way out even through the trying moments. Through intensified networking and strong collaboration with government line agencies, NGOs and people's organizations, some objectives of peace mechanisms became practicable. For instance, from 1988 since the inception of the peace zone, there has been no incident of violent encounters between the Armed Forces of the Philippines (AFP), and the NPA inside or close to populated centers and Sagada has been used several times as a venue for peace negotiations.

Enabled the authorities to exercise integrity in protecting the indigenous people

Through the facilitation of the Mountain Province NCIP, the Free and Prior Informed Consent (FPIC) of the Barlig was elicited before development projects like Globe telecommunications, GMA, and ABS-CBN networks were installed in their area. Similarly, the consent of the community was secured before researches were conducted on mammals and herbal medicines which abound in Mount Amuyao, Barlig.

In Bauko, Mountain Province, community members convened and discussed on the issues with the proposal of declaring Mount Kalawitan as a protected forest reserve. The community, however, rejected the offer since there were many restrictions imposed by the DENR under the National Integrated Protected Area System (NIPAS) law such as no hunting and no cutting of trees. Nonetheless, the consultations determined the collective sentiments and will of the community members.

The cornerstone of community-based development initiative is the active involvement of members of a defined community in at least some aspects of project implementation. When potential beneficiaries are included in the decision-making process, they exercise their voice and choice of empowerment. In this sense, the process of taking informed and culturally appropriate decisions whether to grant their FPIC secures the IPs right to self-determination.

Improved access to basic social services

Establishing a domestic water supply addresses an acute problem that deprives people of basic entitlement, and adversely affects their health. Such is the case of the Bangaan and Tanulong water works funded by the Episcopalian Church of the Philippines- Community Based Development Project (ECP-CBDP). The project has addressed a source of conflict that has gripped the two communities for more than two decades. Due to the limited water supply, neighbors have tried to outwit each other in

gaining more access to the limited water supply, such as installing vertical t-connections of pipes rather than horizontal. With an adequate supply of water that is now being provided by the two water systems, these incidents of conflict are expected to be completely obliterated. Also, people no longer fetch water in the early mornings and late afternoons. The schools greatly benefitted and they foresee cleaner environment and improved hygiene among pupils and students.

Vigilant monitoring of government projects

To ensure that government projects are carried out according to project specifications, the volunteer blocs are still very much active in Bauko and Sadanga. In fact, a Memorandum of Agreement was forged by SADC with the LGU of Bauko affirming the latter's interest to work cooperatively with SADC volunteers in the interest of transparency and accountability. Substandard irrigation projects at Paracelis, and the SONA project along Halsema Highway were also monitored. Findings were submitted to the Department of Works and Highways for appropriate action. Participating in project implementation raises the civic responsibilities of the volunteer monitoring team in a democratic procedure of governance.

Positive media publicity about the province

Insurgency and tribal wars have always been associated with Mountain Province. Nowadays, regional and even national newspapers have begun to notice of its unique culture, the effectiveness of the elders in conflict resolutions and the natural endowments of the province. The Mountain Province is the second most visited place in the Cordillera. This implies that positive news generated about the province has drawn foreign and local tourists to come to Mountain Province.

Increase in business investments

Inextricably linked to the relatively peaceful situation, the local businesses in Mountain Province have boomed. Juliet Lucas, Provincial Director of the Department of Trade and Industry affirms this when she claimed that the mushrooming trade ventures into the tourism industry of the Province are offshoots of the relatively peaceful environment in Mountain Province. On the average, there are about 350 new businesses which continue to sprout annually within Mountain Province. The increasing business investment, an active transportation business, an increase in sales of souvenir products and good reviews on print media about the province are among the indicators of a progressing local economy.

Impacts of other peace-building ventures are hard to quantify. Subjective criteria, based on perceptions and expectations are indirect, and thus, not easily quantifiable or tangible. They focus on psychological, cultural and spiritual dimensions of transition to peace. On the other hand, Jeong (1999) contends that it is important to recognize that non-material, human elements are not easy to calculate, and that some kinds of value judgments are inevitably involved in assessing a peace process and outcome.

Conclusions

Data gathered on peace-building initiatives in Mountain Province showed a discernable trend on the peace efforts of the province which take-off from a bottom-up approach. These are mostly drawn from grassroots-level initiatives. Notions of peace-building are founded on the general perception that to sustain durable peace is to address the sources of conflict discontent. It also evolved out of the realization that armed response to the insurgencies does not provide a practical solution to the problem, but it is the citizens' aspirations that should prevail.

Conflict-prone communities and more populated municipalities have a wider reserve of peace-building mechanisms compared to the generally peaceful municipalities in Mountain Province. Moreover, a significant track of peace-building mechanisms has been noted - that is, the traditional method of conflict settlements are interfaced with the evolving peace initiatives of the province.

Extenuating factors are found to derail or mitigate the peace-building initiatives. Although contextualized on the specific peace-building initiatives, generally, these factors are categorized as cultural, political environment, economic concerns, religious influence, and the collaboration of a multi - sectoral group.

In general, a multisectoral group composed of the government, NGOs, people's organizations, and the church sectors have been actively engaged in peace-building. Such strong collaboration of organizations has stimulated - a desirable peace synergy in the province. It has been noted, though, that the representation of the youth sector in peace-building is sparse.

Impacts of the peace-building initiatives are context-specific. Nonetheless, there are sufficient grounds to claim that peace building initiatives have resulted to desirable outcomes. They are the following: a discernible reduction of crimes; strengthened the local capacities for peaceful negotiations; de-escalation and resolution of conflicts; enhanced negotiating power and public speaking skills of community residents; exercise of the right to self-determination of projects which affect the Indigenous peoples (IPs) ancestral domains; improved access to basic social services; vigilant monitoring of government projects; positive media publicity about the province; and increase in business investments.

Recommendations

Based on the findings and conclusions drawn from the study, the study puts forward the following recommendations:

The findings on the peace-building initiatives in Mountain Province should be disseminated by the researcher through a brochure and a peace module. Also, the Sangguniang Bayan of Bontoc and the Sangguniang Panlalawigan should support the proposal to codify traditional conflict settlements. Legislating the code will institutionalize the use of customary laws in the settlement of conflicts in the

municipality of Bontoc. The youth sector, through the Sangguniang Kabataan representative and the Student Supreme Council president of tertiary schools should join peace forums conducted by the province and should organize peace campaigns for the youth.

Moreover, the faculty and the students should conduct more peace researches. The Mountain Province State Polytechnic College through its Indigenous Knowledge System and Practices program should take the lead in encouraging its faculty and students to contribute to the wealth of indigenous practices related to peace praxis. Through the use of role plays, observations, group discussions and immersions of students, instructors can effectively develop and raise a more peace-oriented consciousness among their students.

The local media should publicize about peace engagements of citizens. Website maintenance of the province is also imperative to publicly disseminate the peaceful situation of the province. A training should be conducted by the academic sectors or by LGUs on proper documentation to improve the capacities of the members of peace-oriented groups. Improved documentation practices will likely yield better quality and prompt submission of reports.

References

- Barash, David & Charles Webel (2002). *Peace and Conflict Studies*. California: Sage Publication, Inc.
- Boutros-Ghali B. (1995). *An Agenda for Peace*. New York: United Nations.
- Executive Order No. 125,s.1993, Defining the Approach and Administrative Structure for Government's Comprehensive Peace Efforts.
- Ferrer, Mirriam Coronel. (1997). *Peace Matters*. Philippines: University of the Philippines Press.
- Franck, T. (1998)"A Holistic Approach to Building Peace", in Olara Otunnu (ed.). *Peacemaking and Peacekeeping for the New Century* Lanham: Rowman & Littlefield Publishers.
- Gutierrez, Eric. (April 1999), The Politics of Transition. Available at <http://www.c-r.org>
- Hall, Anthony, Margaret Hardiman & Dhanpaul Narene. (1986). *Community Participation Social development and the State*. USA: Methven & Co. Ltd.
- Kapayapaan Gabay sa Pagunlad ng Sambayanang Pilipino CY 2006.
- Mariano, Ariola (2006). *Principles and Methods of Research*. Quezon City: Rex Book Store.
- Pugh, Michael. Post-Conflict Rehabilitation: The Humanitarian Dimension. Available at: http://www.isn.ethz.ch/3isf/Online_Publications/WS5/WS_5A/Pugh.htm.
- Reychler, Luc (1999). Peace Architecture. Available at <http://www.gmu.edu/academic/pes/LR83PCS.htm>

Rodriguez, Jorge (2004). **Political peace-building: A challenge for Civil Society**. Available at www.c-r.org/

Swee-Hin, Toh and Cawagas, Virginia (1988). *Peace Education A Framework for the Philippines*. Quezon City: Phoenix Publishing House, Inc.

Empowerment and Capacity Building of Shallot Farmers in Thailand

Yuphin Thuansri¹
Taweesak Siripronpiboon²
Patcharin Sirasoonthorn³

Abstract

"Empowerment and Capacity Building of Shallot Farmers in Uttraradit, Thailand" is a research project that aims to: 1) develop the capacity-building process for strengthening competition and furthering community empowerment working with shallot farmer groups in Uttraradit Province as a pilot project; and, 2) enhance the capacities of the shallot farmer groups in Uttraradit. The author adopts the critical paradigm as the major research framework. Two supportive research paradigms are applied, namely positivism and interpretivism. These helped to identify a research methodology. The selected research methodology is a multi-methodological model that includes documentary research, qualitative research, quantitative research, and action research.

The research findings reveal that providing training alone could not enhance the empowerment of the shallot farmer groups. Instead, this study argues that a "4-Stage Group Empowerment" model, carried out via participatory learning appraisal (PLA) and focus group discussion, is a method that can help increase group empowerment. The "4 Stage Group Empowerment" model is composed of four steps. The first stage includes human resources preparation; the second stage includes identifying problems and the development of alternative activities; the third stage dwells on the implementation of alternative activities; and the fourth stage deals with the expansion of the cooperative network, which incorporates the promotion and development of groups, developing civil society in terms of multi-cooperative partnerships, and promoting a cooperative process for social responsibility.

Keywords: empowerment, capacity building, shallot farming, Uttraradit Province

Introduction

Recent changes in the economic and social status of Thailand, including the influence of globalization and global society, and international capitalism had significantly changed Thailand's production plan and farmers' lifestyles from a sufficiency economy towards a trading economy. The previous farming production system has changed. Now, large quantities of chemical pesticides encourage the farmers to become more dependent on external inputs. This has had a number of negative consequences. Despite the low agricultural production, including weak negotiation

¹ Student of doctoral degree in social development at Naresuan University

² Doctor, Assistant Professor; Dissertation advisor at Naresuan University

³ Doctor, Assistant Professor; Dissertation advisor at Naresuan University

positions when purchasing inputs, and long-term accumulative problems, including impacts on health and finances/debt, the use of chemical fertilizers, has also created negative impacts on the lifestyles of the farmers, in particular, and the nutrition stability in Thailand, in general.

The growing issue could be resolved through the partnership of both private and state sectors. In this article, the authors identify a system for resolution, determined through workshop research and meetings with farmers in shallot growing areas in Uttaradit Province, Thailand. The results of this pioneer study may also be extrapolated for the resolution of farming crisis in other areas.

Background of Shallot Production

The name 'Shallot', in Latin named *Allium Ascalonicum L*, is derived from the town of Ascalon in Palestine. Shallot is a fast growing crop. It has been grown widely for over 1,000 years, including in Egypt and Roman. Ancient Egyptians enjoyed it as an ingredient in their daily food. There are about 500 species of shallots all over the world. The species vary in form and color, depending on their source. One of the main sources of shallot, totaling hundreds of thousand of tons production, is Southeast Asia, particularly Indonesia and Thailand, and from China (Kovatch T.J., 2003, Website: ukshallot.com, Website: shallot.com).

In Thailand, the shallot is a prominent economic crop and an important export product alongside garlic. The major markets of shallot are Indonesia and Malaysia. Shallot is also a popular herbal vegetable that Thai use as an ingredient in their daily food. The main production area of shallot is in the northern, northeastern and western areas of Thailand. Since 1985, there has been a government notification for shallot growing in these areas, although most of the production is in the North.

The shallot grows well throughout the year and is being grown extensively. The best shallot harvest is after the rice farming season when the temperature is rather cool that makes the shallot grow well and is stronger than onion in other seasons (Dept of Agricultural Promotion, 1993). As a result, shallot growing is popular among farmers all over Thailand who have stepped production to meet both domestic and international demand.

Uttaradit Province in particular seems to have significantly increased the shallot production, and is the best-suited area for the export of shallots in lower northern Thailand. In addition, the shallot is the main economic crop in Uttaradit Province and generates the most income. In 2005, Uttaradit province earned a total of 97,297,000 baht from 13,481 Rai (or 5,392.4 acres) of shallot farms. In 2006, the total quantity of shallot produced is third highest in Thailand, after Srisakate and Lumpoon Provinces.

Shallot production

From document analysis and primary field data collection that included in-depth interviews with middlemen and key informants, it is found that Uttaradit province farmers have grown shallot for many years, especially in Lublae, Nampad and Farktha districts. Some of the farmers in Lublae district also like to rent areas in Muang district for shallot growing.

Shallot can be grown using two methods: bulb and seed growing. Bulb growing has been the preferred method for farmers. It is the traditional method and has been adopted for long time. However, it entails higher production cost because it requires the purchasing of bulbs. The seed growing method, on the other hand, has lower cost of production since there is no need to purchase bulbs, but it requires a longer period of cropping.

Generally, shallot is grown twice per year. The first crop is planted between August and September and harvested between October and November. This crop is called the “Rainy Shallot” and is normally grown on foothills and upper-ground. The second crop of shallot is planted between December and January and harvested between March and April. This growing period is called “Summer Shallot.” Summer Shallot is grown in rice paddy fields after the rice is harvested. Most farmers prefer growing rainy shallot than summer shallot since it takes a shorter time and utilizes natural water which is more economical and saves on the labor costs on irrigation. It is worth noting that farmers do not usually grow shallot repeatedly on the same area annually to avoid the soil becoming degraded, which would affect the quality of shallot grown.

According to the data generated from the survey in Lublae district in 1997, the Uttaradit province farmers usually grow shallot after the annual rice crop. This is due to the shallow level of the underground water sources.

It can be estimated that approximately half of the citizens in Lublae district now grow shallot commercially. Before, shallot was mostly grown for individual family consumption. Narongrit Thingewngarm (2006) states that shallot growing in Lublae district began 30 years ago for family consumption until Lumpoon province traders began to buy shallots produced in Lublae district to sell and to replant the bulbs for growing. Since then, farmers in Lublae district began to grow more shallots as it generated a better income than rice farming.

Compared with those grown in Srisakate and Lumpoon provinces, the shallots grown in Lublae district have stronger grain, stronger smell and better endurance in storage. These features are attributed to the sandy soil in Lubale district. Overall, Lublae district shallots grow bigger than other areas, and thus, command better and higher price. Poolchai Theprungsarn (2006) provides data that Lublae district shallots are of good quality because they do not easily wither as a result of the good mineral soils in Lublae district. In addition, shallots are planted in Lublae district after harvesting of rice, and thus, some fertilizers are still present in the soil. This makes the field more suitable to shallot farming. Finally, the farmers in Lublae district have already the

capability and skills in selecting the best bulbs for shallot growing. The farmers choose the bulb with strong and straight leaves.

A suitable climate with the proper quantity of rain water that does not spoil the crop's leaves and bulbs usually is also an important factor in growing a good crop (Pittayothorn Waitayawat, 2007). Since there has not been any academic evidence stating this factor in growing the good quality shallots in Lublao district, the authors decided to incorporate this question into in-depth interviews with middlemen, farmers and agriculture specialist. These informants claimed that the suitable climate is also one of the factors for producing good quality shallots in Lublao district.

Traders from many provinces, including Lumpoon, Chiangmai, and Srisakate, come to Lublao district to purchase shallot bulbs as their planting material. This observation also agrees with a study by Jukkrit (2006) who finds that Lublao district is famous for its good quality shallot.

Results of the interview reveal that 70 percent of shallot farmers in Uttaradit province sell their shallots immediately after harvest. These are sold to middlemen, whose first payment is given in advance, and the full payment during the production period. The farmers could not store the crop as it requires a big investment on their part. Because of this arrangement, the farmers could not sell shallots at a higher price. Some small groups of farmers, however, store and dry the shallots by hanging for 8 to 10 days prior to selling to the middlemen. The price of the dried shallot is usually higher than the price of the fresh shallot.

It was found out from the previous studies that the cost of shallot production in 1998 was 8,270 baht per Rai (The Bank for Agriculture and Co-operative, 2007). The data from our interviews with shallot farmer indicated that the cost of shallot production in 2007 was up to 18,000 baht per Rai.

Shallot Marketing

During the marketing of shallot between February and April, the middlemen purchase shallots directly from the farmers at the farm based on their social and credit relationships. After purchase, the shallots are transported to large markets in Bangkok. Each farmer had to deal with middlemen individually, rather than in association or through a group sale. As a result, the authors observed that middlemen hold an absolute power during the negotiation. The farmers immediately sell their shallots because they have no storage facilities.

Shallot farmers in Uttaradit Province sell all of their shallots through the middlemen. The middlemen who purchased shallot in Uttaradit can be distinguished into three categories: brokers; traveling traders; and middlemen who have their store, whom may be from Uttaradit province or from other nearby areas but with their own store in Uttaradit.

There are four important central markets in Uttaradit, namely Lublae Agriculture and Co-operative Central Market; Chaichumpon Central Market in Lublae; Lublae Shallot-Garlic Groups Central Co-operative Market; and the Shallot Wholesale Market in Muang District. From our observation, the first three markets serve as the centers for trade between middlemen and shallot farmers, while the wholesale market in Muang District is a trading center between traveling traders or the local traders and the final consumers. In the markets (and in contrast to direct purchasing from shallot farmers), the middlemen select the product, weigh and negotiate a purchase price. Once the buying and the selling parties are satisfied with the price, the payment will be paid to the shallot farmers at once.

There are also domestic shallot markets in many provinces including Srisakate, Lumpoon, Petchaboon, Chiengrai, Bangkok, and Haadyai. Furthermore, there are many traders who directly purchase shallots from the farmers or purchase shallots through brokers located in many places in Thailand.

The main exporting companies collect the shallots from large domestic sources and then export the shallots in red bags by ship from Haadyai province. The important international markets of shallots are: the Philippines; Singapore; Indonesia; and Malaysia. Malaysia is the largest importer of shallots from Thailand (Customs Department, 2007).

Problems faced by shallot farmer's groups

Overall, it was found out that most farmers have difficulties as regards the price stability of shallots. The cost of production has also increased. In 2006, the cost of production was recoded as 18,000 baht per Rai. Narongrit Thi-ngew-ngarm (2006) found that, according to farmer groups' leaders, problems faced in production related to the cost of production, for example the high cost of fertilizer and insecticide, as well as the lack of shallot store. In addition, problems in administration management include the unstable price of shallots, a heavy dependence upon middlemen, and that groups of farmers are not strongly united. Furthermore, after free trade zone opened between Thailand and China, the price of shallot has dropped such that some farmers have now stopped their farming and turn to another career.

The agricultural specialist Poolchai Theprungsarn (2006) expands on these above points and also notes that between 2003 and 2005, there was a quantity of shallot imported to Thai markets that which caused the drop of shallot price in Lublae. Middlemen, however, have offered additional data that questions whether any shallots from China to Thailand's markets came to Uttaradit province (Somsak Sombatpinoy, 2007).

The results of our study matched well with the assessment of the Uttaradit Commercial Office (1997), which identifies many of the same problems:

- As a large volume of production goes to the market at the same time, particularly in January and February, which includes products from an enlarged area of cropping, this makes the product price lower. Furthermore, the price of shallot is unstable placing farmers at a higher risk.
- There are a limited number of exporters and little opportunity for enlargement of old and new markets. Exports have decreased as a result of strong competition from Vietnamese and Indonesian producers, as a consequence of irregular production, a lower quality of product, and that exporters are only small export businesses in Thailand.
- Products are of a lesser quality due to the use of insecticide, fertilizer, and hormones that are used to increase production. Poor quality is also a result of too early harvesting. The bulbs could not be stored for long period of time because the quality will deteriorate.
- Issues on management systems, for example, that traders have a strong purchasing power over farmers as the latter are unable to organize into a sufficiently large group or store their products to wait for a better product price.

Furthermore, it was found out that the problems faced by farmers were almost similar compared in the have not varied very much compared to previous years (for example, see Uttaradit Commercial Office, 2004).

It is also found that the debt of shallot farmers seems to be continuously increasing and there is loan scarcity. Records indicate that loans have increased from 5,563,820 baht in 2002, to 6,690,422 baht in 2003, to 7,149,163 baht in 2004 (National Statistic Bureau, 2006, Website). Individually, the amount of farmer debt annually increased from 42,947 in 2002 to 49,668 baht in 2004.

There have been a number of other studies identifying similar issues, including that of Banjong Ruamsuk (2005), Duangduan Prasarn (2004), Suthipong Wongpadsa (2005), Siritorn Booncharoen (2004), Kittisak Wimolsuk (2004), Somyon Boonlee (2004), Siwilai Mongkhuntod (2004), and Wichai Malison (2001). These studies also demonstrated the high use of agrochemicals among almost all of the farmers. Furthermore, these fertilizers and chemical insecticides are used improperly and with inadequate knowledge. They also identify other issues, including a shortage of labor and the high cost of shallot bulbs that results in a high cost of production, alongside a scarcity of loan availability.

Wichai Malison (2001) concludes that it is important for shallot farmers to become aware of the significant benefits of uniting together and that they receive information on the better management, production and marketing of shallots. With continued encouragement from the state and other concerned parties, shallot farmers should

become stronger and strengthen their competitiveness in both the domestic and overseas markets, especially now that they are confronted by global free trade policies.

Resolution and Policy Recommendations

The research findings suggest that presently, the shallot farmers are facing a number of problems. They are working without collaborating with each other. As they struggle to survive individually, they are highly dependent on outside resources, and have comparatively little power in negotiation with middlemen, this is causing cumulative longer-term problems that will continue to negatively affect the farmers' family status and their community. The author therefore has the opinion that the farmer's most crucial problems are derived from systematic problems related to the dynamic and complicated linkages and cycles that are derived from the impacts of rapid economic growth and the associated challenges this brings to society, policy and culture.

The author adopts the critical paradigm as the major research paradigm. Two supportive research paradigms are applied, namely positivism and interpretivism which helped identify a research methodology. The selected research methodology is a multi-methodological model that includes documentary research, qualitative research, quantitative research, and action research.

The author concludes that training alone cannot increase group empowerment among shallot farmer groups, and that a four stage group empowerment model, developed using participatory learning appraisal (PLA) and focus group discussion, would help further empowerment objectives.

- The first stage of the model is human resources preparation. This comprises of: 1) identifying key persons; 2) preparing and designing the form and content of knowledge for distribution; and 3) selection of knowledge distribution methods.
- The second stage of the model is identifying problems and the development of alternative activities. This includes 1) the study and analysis of problems, needs, production methods, and the market-chain of shallots; and 2) the development of alternative solutions for these activities.
- The third stage of the model is implementation. This includes 1) the development of processes for organization and group management; 2) supportive participatory planning; 3) action and evaluation; 4) designing and system testing.
- The fourth stage of the model is expanding the cooperative network. This includes 1) promotion and development of groups; 2) developing civil society in terms of multi-cooperative partnership; and 3) promotion of cooperative process for social responsibility.

The achievement of the above four stage group empowerment model is justified by eight indicators, namely: 1) the application of local wisdom in group activities; 2) effectiveness in problem identifying and solving; 3) the development of learning processes; 4) systematic group management; 5) capacity-building among leaders; 6) equal benefit sharing among group members; 7) the enlargement of the group in terms of its members, the diversity of jobs and activities, and the increasing numbers of organizations involved; and 8) a good reputation with outsiders.

Conclusion

Recently, shallots have emerged as a significant agricultural crop and an important export from Thailand, alongside similar crop species such as onion and garlic, to large markets in Asia, such as Malaysia. Uttaradit province is the source of the best quality shallots in Thailand and is also one of Thailand's most productive shallot producers. Furthermore, shallot is the main economic crop Uttaradit province.

Today, shallot farmer groups in Uttaradit province encounter difficulties frequently, some of which are unlike the past as a result of changing circumstances such as free trade agreements linked to processes of globalization. Thus, to resolve these problems requires the empowerment of shallot farmers that would enable the farmers to negotiate on fair terms with middlemen and make them capable to deal and manage with the problems that they face as individuals and as a group.

Acknowledgement

Special thanks for funding support from Naresuan University, Thailand.

References

- Banchong Ruamsuk. 2005. Research of Production and Marketing of Shallot in Planting Year 2004-2005 Report: case study of Khowang District, Yasothorn Province. Searched on May 30, 2006 from: <http://www.research.doe.go.th/show-rsh.asp?res>
- Customs Department. 2007. Shallot Export statistic, searched on Nov 18, 2007 on: <http://www.customs.go.th/statisticResult.jsp?productcodeCheck=Y&productCode=07031100121&hsradio=engkeyword=shallot&statType=export&month=12&year=2006&submit=search>
- Department of Agriculture Promotion. 1993. Instruction Brochure 28, Shallot, 2nd edition, Bangkok. Agricultural Cooperative Association of Thailand
- Duangduan Prasarn. 2004. The study Shallot Production for Commercial of the Farmers of Planting Year 2003/2004, Yangchumnoi District, Srisakate, searched on May 30, 2006 from <http://www.research.doe.go.th/show-rsh.asp?res>
- Jakkrit Pinyapong. 2006. Report of the Research in Community Participation to Decrease Chemical Substance, Case Study: Chaichumpon, Lublae District, Uttaradit, Rajchabhat Uttaradit University

- Kittisak Wimolsook. Date disappearance. The Study Shallot Production of the Farmers in Srisakate, Plant year 2003/2004, searched on May 30, 2006 on: www.research.doae.go.th/show-rsh.asp?res.
- Kovatch T.J. 2003. Shallot, Master Gardeners Journal. Retrieved on June10,2006 from: <http://www.co.ozaukee.wi.us/MasterGardener/Journal?Shallot.PDF#search=22shallot.pdf%22>
- Lublai District Agricultural Office. 1997. Agriculture Information Uttaradit Provincial Agricultural Office, 2006: Computer Information File Uttaradit Agricultural and Cooperative Office, 1997: Annual Report
- Narongrit Thi-ngewngam. 2006. The Interviewed; Yupin Thuansri, The Interviewer Shallot farmer Network Leader, Lublai District, 103/2, Village 8, Chaichumpon Sub-district, Lublai District, Uttaradit, August 23, 2006
- National Statistic Bureau . date disappeared. Farmers' Debt: searched on December 30, 2006 from: <http://www.nso.go.th>
- Pittayothorn Waitayawat. 2007. The interviewed, Yupin Thuansri, the interviewer, Land Development Station, Muang District, Uttaradit, February 6, 2007
- Poolchai Theprangsarn. 2006. The interviewed, Yupin Thuansri, the interviewer, Lublai District Agricultural Office, Uttaradit, May 10, 2006
- Shallot. no date. Retrieved on November 30, 2006 from: <http://www.shallot.com> no date. retrieved on November 30, 2006. from: <http://www.ukshallot.com>
- Siriporn Siripanyawat. 1998. Assessment on Garlic and Shallot Production Technology: Thesis of conomic Master Degree, Chiangmai University
- Sirithorn Booncharoen. 2004. The Study on Production Status of the Farmers in Sompoi Sub-district, Rasrisalai District, Srisakate, 2003-2004: searched on May 30, 2006, from: <http://www.research.doae.go.th/show-rsh.asp?res>
- Siwilai Mongkhuntot. 2004. The Study on Shallot Production Status of the Farmers in Planting Year 2003-2004; Case study of Namkhum Sub-district, Muang District, Srisakate, searched on May 30, 2006 from: <http://www.research.doae.go.th/show-rsh.asp?res>
- Somyon Boonlee. 2004. The research on Shallot Production Status of the Farmers in 2003-2004: Case study of Busoong Subdistrict, Wanghin District, Srisakate. Searched on May 30, 2006 from: <http://www.research.doae.go.th/show-rsh.asp?res>
- Somsak Sombatpinyo. 2007. The interviewed, Yupin Thuansri, the interviewer, 102, Lublai District, Uttaradit, on January 20, 2007
- Suthtipong Wongpatsa. 2005. The Study on Shallot Production of the Farmers in planting year 2003-2004: Case Study of Buanoi Sub-district, Kantrarom District, Srisakate, searched on May 30, 2006 from: <http://www.research.doae.go.th/show-rsh.asp?res>

The Bank for Agriculture and Cooperative. 2007. Expense on Individual Province Production,
searched on August 21, 2007
from:http://www.datacenter/agr_product/expense_income/prov.htm

Uttaradit Commercial Office. 1997. Production and Marketing Situation of Shallot and Garlic;
Ministry of Commerce 2004. Marketing Information of Uttaradit Province, 2004; Ministry
of Commerce

Wichai Malisorn. 2001. The Study Report of Shallot Production in Lublae District Uttaradit,

Quality of Work Life Indicators as a Corporate Social Responsibility (CSR) of Electrical and Electronics Private Organizations in Thailand

Waraphorn Na Thalang¹, Piratorn Boonyarataphun²,
Patcharin Sirasoonthorn³ and Taweesak Siripornpiboon⁴

Abstract

Today, business organizations survive because of their strong network and effective corporate social responsibility (CSR). CSR in business organizations concerns human resource development and creates activities such as competitive brand sustainable profit. For a more effective CSR, developing a good Quality of Work Life (QWL) is crucial. These include intrinsic job quality and skills, life-long learning and career development, health and safety at work, better organizational management, and work life balance.

This paper highlights the results of the study entitled “Quality of Work Life Indicators as a Corporate Social Responsibility of Electrical and Electronics Private Organizations”. The paper presents the significance of improving the QWL, concerning labor regulations, human rights and ethics. Practical QWL indicators were developed in various groups, namely: grassroots, operational workers and experts. The respondents of this study include the 2199 factory workers and 587,173 employees of electronic organizations. The data were gathered using focus group discussion and survey.

Keywords: QWL, CSR, indicators

Introduction

Strong Corporate Social Responsibility (CSR) is an important tool for the sustainability of an organization. Doing business with CSR within and outside the organization considers economic, social, legal, environmental and ethics dimensions. CSR creates an impact to the different stakeholders and shareholders. Within an organization, an important measure of CSR is the Quality of Work Life (QWL) of employees. Employees are the assets of an organization, because they are directly involved in the development of a particular technology that would benefit the communities and clients, and the organization itself. Thus, QWL indicators in corporate social responsibility is an important checking tool to help the organization improve its

¹ Ph.D. student, Social Science Faculty, Naresuan University, warapon26@gmail.com

² Ph.D. Political Science. Social Science Faculty, Naresuan University

³ Associate Professor, Ph.D. Political Science. Social Science Faculty, Naresuan University

⁴ Assistant Professor, Ph.D. Statistics. Science Faculty, Naresuan University

strategies to achieve the objectives and targets.(Marcela Srchova, 2008, pp1-10, Anna T Lawrence and James Weber, 2008, pp39-60)

The concept of CSR was established in the 1950. It is a way of managing a company and making relationships with partners which contribute to improving the reputation and credibility of a company. In 1960-1980, CSR meant not only fulfilling legal expectations, but also going beyond compliance and investing more into human capital, the environment and relations with stakeholders. In 1990 to present, CSR is a product use, which focuses on contribution of industrial products which help in the well-being and quality of work life of their society; business practice which focuses on good governance and give high impetus for the environmental well-being; and, equity which tries for distribution of profits equitably across different societies especially the host community. Thus, QWL is the most important responsibility that an organization has to perform (Cascio, 1998, pp18-19, Kotler P and Lee N., 2005, pp15-26).

There are four major dimensions of CSR, namely: economic, environmental, social and ethics. The social and ethics dimensions are comprised of: 1) *Organization governance*, a system by which an organization makes and implements decisions in the context of accountability, transparency, ethical conduct, consideration of stakeholder's interests and legal compliance; 2) *Human rights*, the primary obligation to protect individuals and groups against abuse, as well as to respect and fulfill human rights within their jurisdiction assumes that in moral universe, every person has certain basic rights, civil and political rights, social economics and cultural rights, vulnerable groups, fundamental rights at work; 3) *Labor practices*, the creation of jobs, as well as wages and other compensation paid for work performed are among an organization's most important economic and socials impact based on employee and employment relationship in good condition of work and social protection, social dialogue, good health and safety at work by Human Resource Development; 4) *Environment*, to include prevention of pollution, sustainable resource use, climate change mitigation and adaptation, protection and restoration of the natural environment; 5) *Fair operating practices*, such as anti-corruption and anti-bribery, promote social responsibility through the supply chain, political involvement, fair competition, respect for property rights and in the sphere of influence 6) *Consumer issues*, such as fair operating, marketing and information practices, factual and unbiased information and fair contractual practices, protecting consumers' health and safety, mechanism for product recall, provision and development of environmentally and socially beneficial goods and services, consumer service and support, consumer data protection and privacy, access to essential goods and services, sustainable consumption, education and awareness; and 7) Community involvement and development, education and culture, employment creation and skills development both technology development and access, that is inside out and outside in CSR activities (Corporate Social Responsibility, Department of Industrial Works: CSR-DIW, 2008, Noe R.A., Hollenbeck J.R., Gerhart B. and Wright P.M., 2007 p 17).

Creating effective CSR means continuing commitment of the business organization to behave ethically and contribute to economic development while improving the QWL of the workforce and their families as well as those of the local communities and society

at large. One of the requirements of CSR is the QWL in terms of labor practice and human rights. These include intrinsic job quality, skill, life long learning and career development, health and safety at work, better organization management, employee rights and work life balance. In the past, the CSR within an organization include human resource management, work safety and health measure, management of environmental impacts. Quality of work Life (QWL) is a major concern and a creative activity as well of the human resource. QWL consists of: 1) Save and Health Environment during work, 2) Growth and Security of Work, 3) Human Rights, 4) Total Life Space, work organization and work life balance, 5) Adequate and fair compensation, 6) Development of Human Capacities concern intrinsic job quality, and 7) Social Integration support employees for equality work. (V. Royuela, J. L. Tamayo and J. Surinach, 2007, pp6-10)

In Thailand, electrical and electronic organizations are the major sources of exports. Since 2005-2009, this sector was estimated to have around 2,199 factories and 587,173 employees (Kattiya Kraikarn, 2009, pp14-17). Besides having a large pool of manpower, the electrical and electronics sectors also have the biggest risk in terms of the occupational health. Employees in electrical and electronics organizations are always exposed directly and indirectly to the chemicals while at work. As such, the European Parliament issued a directive 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 restricting the use of certain hazardous substances, in electrical and electronics equipment. This directive reflected the QWL of employees by reducing their exposures to the Hazardous Substances (National Metal and Material Technology Center, MTEC, 2004, pp 43-81).

Research Objectives

A research was conducted to assess the QWL of the employees, as a CSR of the electrical and electronics organizations. Specifically, the study aimed to: a) study the concepts and theories of the quality of work life indicators as CSR; b) analyze the status of the employees' QWL in private organizations; c) develop the framework of QWL indicators for electrical and electronics organizations; and, d) develop QWL indicators as CSR of electrical and electronics organizations.

Research Process and Outputs

This research used multiple research methods. These include documentary research, qualitative methods, and quantitative research. The documentary research involved literature review about human resources development, QWL, CSR, CSR indicators and others. The researcher came up with QWL indicators Draft 1 using a survey questionnaire. The questionnaire revolved around getting the opinions and perceptions of electrical and electronics organizations about the cost-effective indicators from the employees, staff and management team. The QWL indicators Draft 2 was carried out using focus group discussion. The Draft 2 focused on the specific indicators. Lastly, the Final QWL Indicators Draft Manual was developed through and in-depth interview with the experts and specialists.

The researcher gathered the data in 2009 from the operators and management staff who work in electrical and electronics organizations, that have passed the Industrial Department in Thailand, Support for Corporate Social Responsibility in Organization Project.

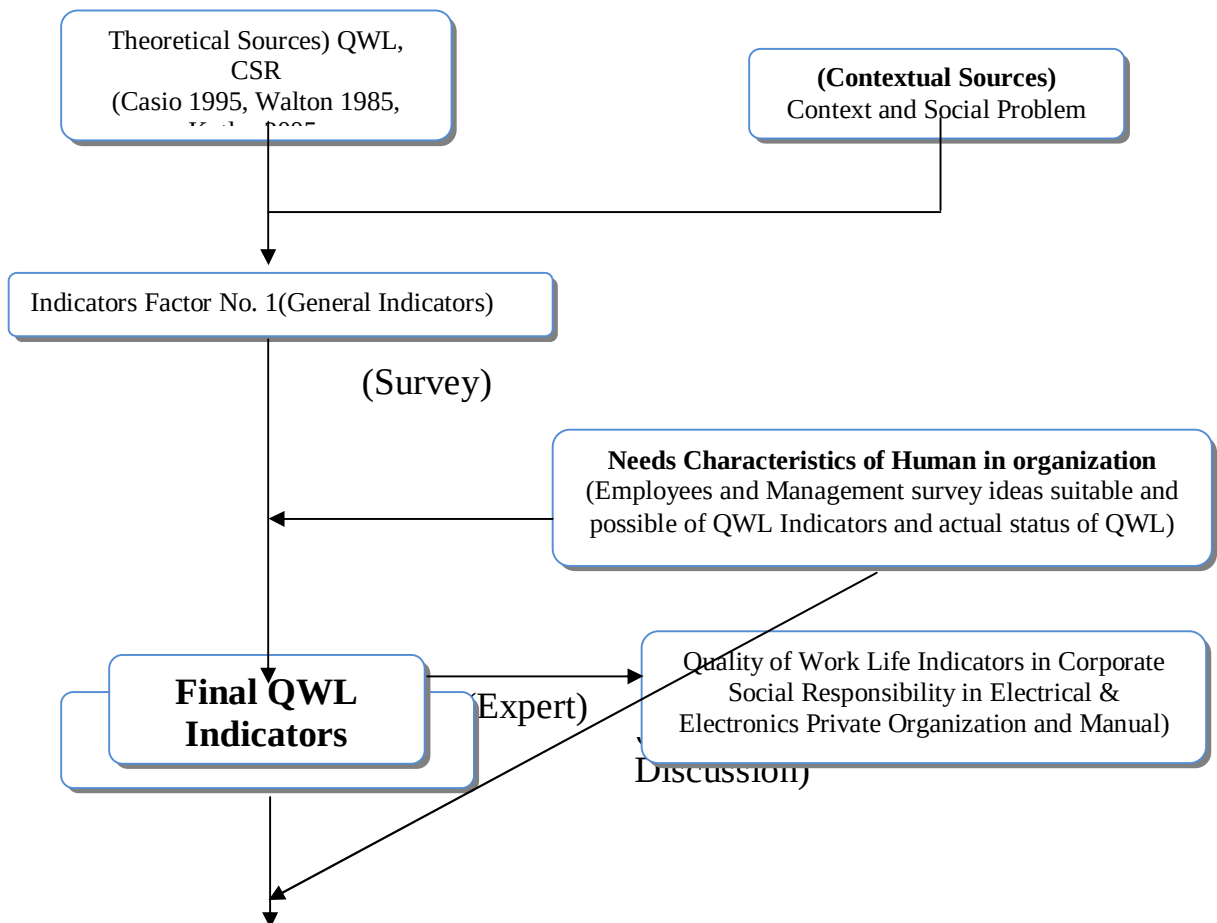


Figure 1. Steps undertaken in the development of the Quality of Work Live indicators incorporate Social Responsibility

Bibliography

Anne T. Lawrence, James Weber (2008), **Business and Society Stakeholders, Ethic, Public policy**, Mc Graw-Hill Companies Inc, New York, USA

Cascio (1998) **Managing Human Resources Productivity, Quality of Work Life, Profit**, fifth Edition, McGraw-Hill Company, USA

National Metal and Material Technology Center (2004), **Directive 2002/95/EC of The EUROPEAN PARLIAMENT AND OF THE COUNCIL OF 27 January 2003 on the use of certain hazardous substances in electrical and electronic equipment**, Thailand

Royuela, V., Tamayo J.L. and J. Surinach (2007) **The Institution vs. the academic definition of the quality of work life. What is the focus of the European Commission ?** AQR-IREA Research Group, University of Barcelona, Barcelona Spain

Kotler P and Lee N. (2005), **Corporate Social Responsibility: Doing the Most Good for Your Company and Your Cause**, John Wiley & Sons, inc., New Jersey, Canada

Kattiya Kraikarn (2009) **Thai Electrical and Electronics in Crisis**, For Quality June 2009, Thailand

Marcela Srchova (2008), West Bohemia University, Czech Republic, **Corporate Social Responsibility-Factors of Performance and Competitiveness**

Corporate Social Responsibility, Department of Industrial Works: **CSR-DIW**, 2008)

Noe R.A., Hollenbeck J.R., Gerhart B. and Wright P.M. (2007) **Human Resource Management**, Second Edition, Mc Graw-Hill/Irwin Company, New York, USA

Promoting Sustainable Agriculture Development and Farmer Empowerment in Northeast Thailand

Sachika Hirokawa

Doctoral Program

Graduate School of Media and Governance

Keio University, Japan

sachika@sfc.keio.ac.jp

Abstract

This paper examines a case of sustainable agriculture development and farmer empowerment in Northeast Thailand. It clarifies the local systems and practices which not only promote sustainable agriculture but also empower small-scale farmers in choosing and designing strategies for them. In Thailand, a sustainable agriculture policy was adopted after the concept of "sustainable agriculture" in the 8th National Economic and Social Development Plan. The government of Thailand adopted the philosophy of the "sufficiency economy" at the national level after 1997, which was the year of the Asian financial crisis, and promoted sustainable agriculture throughout its 9th and 10th plans. According to the report by the National Economic and Social Development Board, integrated agriculture is the most prevalent method of farming among the different kinds of sustainable agriculture used by Thai farmers. Even if a farmer hopes to introduce a method of environment-friendly farming, there are difficulties that have to be solved. A farmer might face stiff opposition from family members and neighbors because of the lack of understanding. A farmer needs supportive people in order to access appropriate information and lower the transactions costs. This research examines the reasons given by farmers who have shifted to the other farming methods. In order to promote a greater understanding of the strategies used by farmers' households and communities, it is important to have an in-depth knowledge about sustainable agriculture as it is practiced by various actors in villages.

Keywords; Sustainable Agriculture, Northeast Thailand, Small Farmers, Empowerment

Introduction

Agriculture is a significant social sector and is a way of life for the majority of the population in Thailand. Over 33.5 percent of the nation's households occupied over 34.9 percent of national area, and the agriculture sector contributed over 330,383 million baht to the country's GDP, accounting to 10.2 percent in 2002. The value of export agricultural products, excluding agricultural industrial products, increased rapidly from 8,400 million baht in 1967 to 694,177 million baht in 2002 (NESDB 2004, p.6). The main agricultural products became more diverse, changing from rice, corn, potato, rubber, linen, and tobacco to new market crops such as nuts, palm, vegetables, and fruits as well as fodder for cattle farming and fish.

The emergence of the concept of “sustainable agriculture” is due to the several problem consciousnesses on conventional modern agriculture. During the 1960s and 1970s, most of the countries in Southeast Asia adopted the ‘green revolution’ in order to increase agricultural productivity. In rural areas, the absolute amounts of agricultural revenue increased. It provided cheap agricultural products to labors in urban areas and accelerated the growth of industry sector. However, several studies pointed out problems which were caused by the green revolution, such as environmental degradation and widening economic gaps.

The government of Thailand tried to promote sustainable agriculture and the 8th plan aimed to revive the rural community using sustainable farming by reaching 25 million rai¹ for sustainable agriculture and 20 percent of national arable land targeting 8 million farmers (NESDB 1997). However, in reality, the program could not reach the goal as of 1999. According to the research paper of National Economic and Social Development Board (NESDB 2004, pp.15-18), by half of the 8th plan, practical sustainable agriculture farming covered 2.68 million rai or 10.7 percent of the goal. Seventy-one percent of the development project of 3.8 million rai was put into practice. The breakdown was 3.3 million rai were covered by the integrated farming, 0.22 million rai were covered by “New Theory” farming, and 0.32 million rai were covered by agro-forestry. Organic farming and natural farming were not well-known. Green Net Cooperatives counted number of farms in 2002 and found that there were 1,169 organic farms in Thailand, covering 53,777 rai with production of 71,533 tons and participants over 0.98 million households. Based on the results, integrated agriculture is the most prevalent method of farming among the different kinds of sustainable agriculture used by Thai farmers.

Several studies pointed out not only positive but also negative impacts of past agricultural development. According to a research report of NESDB (NESDB 2004, pp.9-14), these were (1) Chemicals: The intensive chemical use of commercial farming damaged farmers’ health and quality of life. In 2003, Thailand imported 9,790 tons of pesticides and 31,879 tons of weed killing chemicals, with total value of 11,341 million baht. (2) Soil erosion: Surface soil which contains nutrients were lost covering over 41.95 percent of national arable land, the damage area increased from 107.7 million rai in 1981 to 134.5 million rai in 1995. The soil damage was estimated to be 3,774 million baht by the Land Development Department. This damage directly hurt agriculture production as it reduced production efficiency and accelerated the use of chemicals. (3) Health conditions: There are short and long term effects of the producer and consumer health condition. From 1989-1998, there were 38,223 reported illnesses from pesticides that caused 338 casualties. (4) Low quality of life: Use of chemicals made production costs higher than before. Instability of market price and weather factors pose higher risk to the production, particularly to the agricultural sector. They suffered net losses from their production, due mainly to increasing input prices and decreasing farm commodities. Especially for small farmers, a farming system should give priority to food security for the farm household because self-sufficiency in staple foods such as

¹ A “rai” is a unit, equal to 1600 square meters (0.16 hectares), used for measuring land area in Thailand.

rice, vegetables and fish is a basic need. Low product price, debt, and quality of life are three main problems to the farmers.

In Thailand, there are five main types of sustainable agriculture. These are integrated farming, organic farming, natural farming, agro-forestry, and "New Theory" farming. Each explanation is based on the definitions of the NESDB (NESDB 2004, pp.10-14). In "organic farming", farmers do not use chemical fertilizers and instead use organic fertilizers to nurture soil and natural pesticides such as strong smelling plants to control pests. Meanwhile, "integrated farming", encourages the farmers to diversify their farming system by growing multiple crops to ensure environmental stability. Farmers can be self-sufficient because they can grow their own food such as rice, vegetables, fruits and meat and surplus can be sold to the market for extra income. This system is regarded as the most appropriate land use strategy for small farmers in the North and Northeastern parts of Thailand. The emphasis is primarily on food security and efficient use of farm resources. "Natural farming" has four criteria -- no soil adjustment, no chemicals, no pesticides, and no weed removal.

"Agroforestry" means farming the forested land in a sustainable way. "New Theory" was proposed by His Majesty, the King of Thailand on 25 January, 1993. This concept was about the land use and management of crop production for sustainable development of small farmers whose average size of the farms is 10-15 rai. In this theory, the farm land is divided into four parts with the ratio of 30-30-30-10, for the establishment of pond as water reservoir, rice farming, agronomic crops, and house and vegetable garden, respectively (Subhadrabandhu 1998, pp.1-6). The 8th National Economic and Social Development Plan (1997-2001) adopted the idea of sustainable agriculture as a significant approach under the regional and rural capacity-building and development strategy.

When economic crisis hit Thailand in 1997, His Majesty the King advised the Thai people to change their economic philosophy in order to cope with present economic adversity and withstand future economic insecurity. His Majesty's words have become known as the Philosophy of the "Sufficiency Economy" and have been used as the guiding principle in drafting the 9th National Economic and Social Development Plan (2002-2006). Despite the support from the government and collaboration from the private sector, past achievements had been very much under the targeted goal. Therefore, 9th plan, provided adjustments in the policy to make the promotional campaign more suitable and more efficient to the development process. The new adjustment aims to expand sustainable agriculture development along with capacity-building of the farmers through increasing farm income, creating employment opportunities, and providing good quality of life. These goals would provide opportunities for the stakeholders to be more prepared in implementing sustainable agriculture in order to build learning process and development network.

The research report of NESDB pointed out three obstacles of sustainable agriculture (NESDB 2004, p.16). In the beginning, there was a lack of know-how, readiness, and government administration. Farmers were not ready in terms of (1) *Physical assets* such as land rights, confidence to make new adjustments, lack of water resource, and lack of labor. (2) *Economic assets* like lack of funding to make adjustments like digging ponds, clearing the old soils, and purchasing new tools. Outstanding debt also caused lack of interest. (3) *Social infrastructure* such as the lack of motivation to sustainable farming, lack of opportunity to learn and apply knowledge, lack of networks and assistance. These factors hindered the accessibility of government campaigns to the local farmers. Thus, it is worth studying how people can construct supportive environment which enables them to overcome such difficulties.

This paper examines cases of sustainable agriculture development and farmer empowerment in Northeast Thailand. This research attempts to clarify the local systems and practices that not only promote sustainable agriculture but also empower small-scale farmers in choosing and designing strategies for them. Through case analyses, I focused on small farmers' endeavors in shifting from the conventional farming involving chemical inputs to an alternative farming. This research clarifies the difficulties of the farmers and how they have overcome these. By using resource-flow diagrams, this research offers a view about the kind of actors and organizations that empowered the farmers.

Methodology

The following cases are based on the data which I have collected the nine-round field research in Northeastern Thailand from 2004 to 2009. One round took about one month. I chose three research sites with the assistance from a professor at Khon Kaen University. These research sites have farmers who had experiences in alternative farming methods that were introduced to their area. I used the semi-structured, in-depth interview which revolved on their farming histories and management. The main targets were small farmers including the key villagers such as the headmen of villages and leaders of community groups in order to make proper resource-flow diagrams of the village. Data were collected from 100 households in the three villages in Khon Kaen province in Northeast Thailand. In order to back up the analyses of these cases, secondary data and statistics were also obtained.

This paper focuses on the cases in 'BC' village in Muang district (capital district) in Khon Kaen province, which is one of the research sites. Khon Kaen is the second-largest in the Northeastern provinces and is located 445 km northeast of Bangkok. Northeast Thailand became the center of attention because it had long been regarded as the poorest region in Thailand. The statistics of per capita Gross Regional Products (GRP) showed that the per capita GRP of the Northeast is only 12–13 percent of Bangkok's, which means that the Northeast earns an average income which is only one-eighth of Bangkok. The income gap between Bangkok and the Northeast in terms of household income is three times, which is considerably lower than the GRP data but still much higher than that in other countries (Ikemoto 2004). Many actors, such as government and NGOs, came to implement projects on sustainable agriculture in this

region. Thus, this area is suited for analyzing the empowerment process by observing various actors and farmers.

According to Friedmann (1992, p.33), alternative development seeks the empowerment of households in three kinds of power: social, political, and psychological. Social power is concerned with access to “bases” of household production, such as information, knowledge and skills, participation in social organizations, and financial resources. Political power concerns the access of individual household members to the process. Political power is not only the power to vote but also the power of voice and of collective action. Psychological power is described as an individual sense of potency. Thus, it is important to recognize how power of farmers is enhanced in actual and concrete contexts.

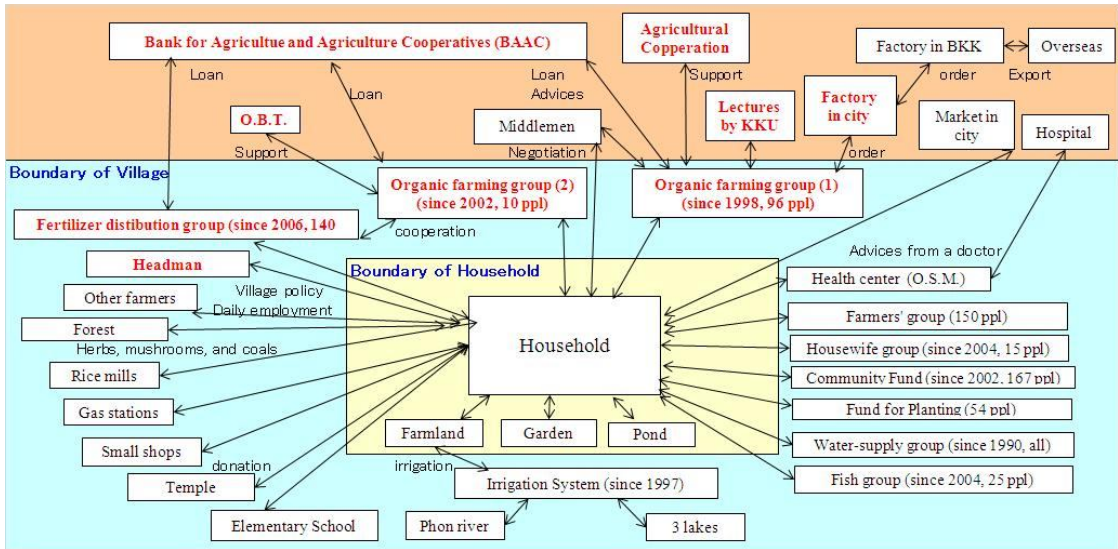
As Sato acutely pointed out (Sato 2005, pp.201-209), the process of empowerment has three steps. First, the actors become aware of the “problems” they face. Second, they build their capacity by obtaining knowledge and skills from external actors. Third, from acquiring knowledge and skills, they change the social relationships around them in order to implement their knowledge to resolve their issues. Through the case analysis, I would focus on the process how farmers traced these three steps, what kind of external actors were affected, and how farmers were empowered.

“Resource-flow diagrams” were used as tools of the Rapid Rural Appraisal (RRA) approach² for comparing the situation between 1997 and 2008 in BC village. There were three frames in the resource-flow diagrams: a range of a household, a village community, and external actors. These ranges are divided by a boundary of household and a boundary of village. On the map, actors, organizations, and resources which relate to sustainable agriculture were marked in the red bold-faced type in Figure 2. Figure 1 was based on personal interview with key persons such as the head of the village and leaders of community groups. Figure 2 was constructed on the basis of personal interview about the current situation in BC village.

Years 1997 and 2008 were chosen as the comparisons periods based on two considerations: First, in 1997, sustainable agriculture policy was incorporated in the 8th NESDP (1997-2001). Second, in 1997, there was an Asian financial crisis. At that time, unemployed people increased in urban areas. Migrants from rural areas returned and were absorbed by rural agricultural areas as a safety net (Pasuk 2002, pp.434-436). After 1997, community groups and organizations which were related to sustainable agriculture appeared gradually. Thus, it is worth comparing between 1997 and 2008 which is current situation in order to observe the difference of supportive environment for sustainable agriculture.

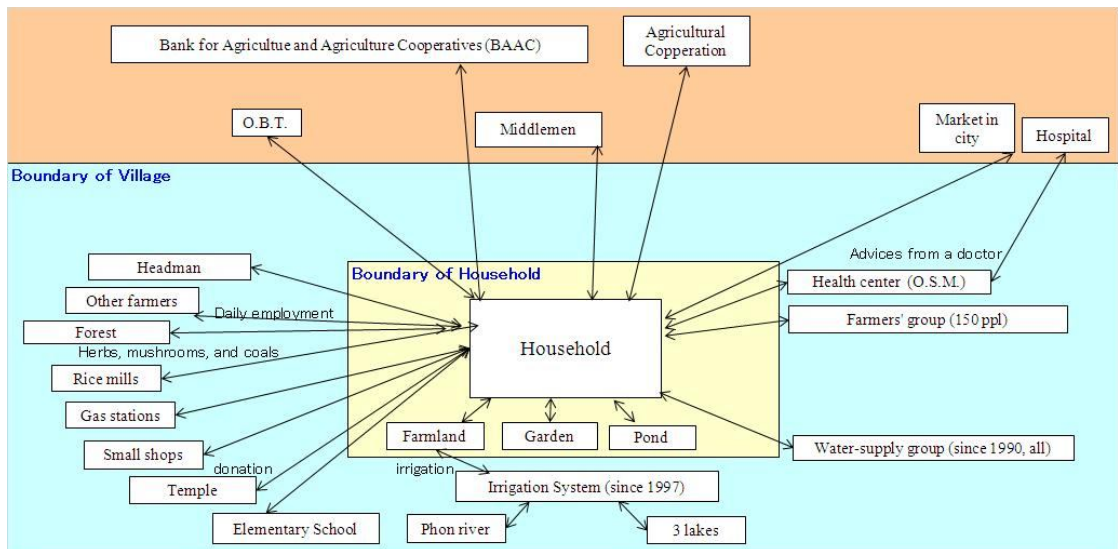
Source: Based on personal interview with community leaders in 2004

² Rapid Rural Appraisal is a research method that enables social development practitioners and academics to understand the situation of target effectively in a systematic manner. Chambers describes the orientation of RRA as a “fairly-quick and-fairly-clean” methodology, and as opposed to the fast and careless studies and the slow and excessively accurate approaches. (Chambers 1983)



Source: Based on personal interview with community leaders in 2004

Figure 1. The Resource-flow diagrams of BC village in 1997



Source: Constructed on the basis of own field research in BC village in 2008

Figure 2. The Resource-flow diagrams of BC village in 2008.

Case Analysis

Changes in the Surroundings of BC village

There are 228 households in the BC village. Of these, 168 households rely on farming. BC village is not far from Khon Kaen city. It is just 15 km from the city. The main agricultural products are rice, eggplant, long beans, and chili peppers. BC village has enough water resource such as three lakes and irrigation systems because the village lies along the Phon River. Thus, farmers can plant two crops a year with modern farming methods. There are seven community groups, namely: the farmers' group, two organic agricultural groups, housewives' group, a community water-supply group, fishers' group, and a community fund group. Most farmers rely mainly on farming such as rice and local vegetables, while others work in Khon Kaen city.

All farmers in the BC village used to employ the conventional farming using chemical inputs. In recent years, however, some farmers have changed their farming methods from chemical agriculture to organic agriculture. There are four factors that have enabled this change. First, the headman of BC village made local appeals about environment-friendly practices and publicly stated that 'BC village promotes integrated agriculture' in order to enhance the appeal of the village. Second, the projects and lectures on organic agriculture were provided as part of the activities of the agricultural extension of the local University. Third, two community groups of organic agriculture were established. One was established in 1998 by the Agricultural Cooperative and another was established in 2002 with the support from the Sub-district Administrative Organization, O.B.T. (Ongkan Borihan suan Tambon) in Thai. Finally, it is now easier than ever to access media such as radio, TV, journals, and magazines.

Information from the media has become important to villagers at present. Villagers check the prices of products in order to plan for the best time to sell them. The villagers obtained knowledge from media, and it stimulated some of them to begin the organic agriculture. We can see these changes in Figures 1 and 2 above. After these changes in the environment, some farmers were doubtful about using chemical fertilizer because of their obtained knowledge of chemicals and of the benefits of organic farming that they gained from various actors. They have also realized that organic fertilizer is much cheaper than chemical fertilizer.

The following section shows how farmers were empowered through an analysis of the individual cases.

Case 1: Importance of Information and Understanding of the Surrounding Community

This case shows the importance of information and understanding about the surrounding community. Mr. Thammarot, a 46-year-old farmer in BC village, owned a 16-rai land. Ten years ago, Mr. Thammarot got sick and was advised by a doctor in a hospital not to use too much agro-chemicals. He wanted to change his farming method, but he could not change at that time because his family, especially his wife, strongly

objected to his idea because there was no guarantee of success. Moreover, there was not enough information or materials about organic farming available in the village. At that point he gave up hope of organic farming.

The villagers' awareness about the importance of organic farming began to grow gradually due to the establishment of organic agriculture groups, lectures from local institutes, and the incorporation of organic agriculture in the village agricultural policy in BC village (Figure 2). Mr. Thammarot acquired his knowledge and skills in organic farming through his participation in the training and other related activities. Moreover, he was able to get the materials for organic farming by ordering them from agricultural catalogues. The existence of different kinds and levels of information media convinced him to shift from chemical-based to organic farming in 2005. His family had eventually come to agree with the plan. This case highlights that the village head, local university, and the group of organic agriculture influenced Mr. Thammarot to shift to organic farming.

Case 2: Importance of Supportive Environment for Small Farmers

This case shows the importance of supportive environment which enables small farmers to adopt appropriate farming method. Mr. Chai, a 60-year-old farmer in BC village, owned an 11-rai land. After graduating from a primary school, he already engaged in farming. He cultivated 8 rai for sticky rice. He used to cultivate vegetables in the 3-rai land, but because of his old age, he could no longer maintain the vegetable garden, and thus, he used this area for bamboo grove. He just grows vegetables for self-consumption in a small garden.

Mr. Chai has been using chemical inputs in farming since 1975 because of because he learned from others that these were effective in terms of producing good-quality products. However, he has observed that the soil quality has degraded over the years. When he got sick in 1998, the doctor concluded that his sickness was brought about by the exposure to too much chemicals. As such, he wanted to change his farming method, but he had no knowledge about it at that time.

When two organic agriculture groups were established in BC village, Mr. Samai, who is Mr. Chai's neighbor, became a leader of an organic agriculture group. Mr. Samai invited Mr. Chai to participate in the group activities. Since then, Mr. Chai began to use several kinds of organic fertilizers. He started using cheap composts from the group and company-made organic fertilizers. He has learned so much from the lectures in the village, and began to use the home-prepared liquid as organic fertilizers which were made from fermented fruits and vegetables. He realized that the soil quality of his farmland has improved. Even though his cash income decreased, his expenditures for chemicals likewise decreased, and thus, his net income actually increased. More importantly, Mr. Chai recognized the current farming method is much safer than the conventional method.

Concluding Remarks

This paper argues that farmers choose their farming methods not only out of their need but also in accordance with the regional contexts offered by the external environment. There are three frames that are significant factors in their decision-making: the household (family members), the village community, and external actors. The two cases that were analyzed in this paper showed how regional conditions and individual conditions for choice are closely related to each other.

Through these cases, we could see that there were two obstacles in changing the farming method. In case 1, the family objected to organic farming because of their lack of understanding. It was difficult for a farmer to change his farming method without the consensus of his family. This reflects the fact that decision-making is not only an individual issue but also a family issue. Second, the lack of information can be an obstacle. If farmers do not have an adequate knowledge about alternative farming within the scope of their community and its knowledge base, it is the same as having no choice. In other words, they do not know the way to go about it; they may not even realize such method exists, and thus, it could not be among their options.

These two cases showed the importance of information and the understanding on the part of the external environment. This study, although limited in scope, shows that the rural areas in developing countries have limited safety nets. Further research on the different individual and community strategies should therefore be conducted in order to find out their mechanisms to ensure a sustainable future.

Acknowledgement

I would like to express my profound gratitude to those who have cooperated in the completion of this paper. Prof. Lynn Thiesmeyer and Prof. Michio Umegaki kindly helped and gave comments as my advisors in Keio University. This research was partially supported by the Ministry of Education, Science, Sports and Culture, Grant-in-Aid for Research Fellows of Japan Society for the Promotion of Science (No. 8389, 2007 - 2008) and grants from Shonan-Fujisawa Campus of Keio University, which enabled me to conduct the field research.

References

- Chambers, Robert. 1983. *Rural Development: Putting the Last First*, Harlow. England: Longman Scientific and Technical.
- Dixon, Chris. 1999. *The Thai Economy: Uneven Development and Internationalization*. London: Routledge.
- Friedmann, John. 1992. *Empowerment: the politics of alternative development*. Cambridge: Blackwell.
- Ikemoto, Yukio. and Takei, Izumi. 2004. "Regional Income Gap and Migration: the case of Thailand". *Harvard Asia Quarterly*. volume VIII, No.3, Cambridge, Harvard Asia Center.

- Ministry of Agriculture and Cooperatives, Agricultural Statistics of Thailand, available at <http://www.oae.go.th/> (June 5, 2010)
- National Statistical Office. 2000. *Statistical Reports of Northeastern region (2000)*. Bangkok: NSO.
- NESDB. 1997. *Rural Development, Natural Resources and Environmental Conservation and Prosperity Decentralization during the eighth plan (1997-2001)*. Bangkok: Office of the National Economic and Social Development Board.
- . 2002. *The Ninth National Economic and Social Development Plan (2002-2006)*. Bangkok: Office of the Prime Minister.
- . 2004. “*Kaanpramen kaanpattana sakkayapab Lae kunnapab chivit kasettakorn kong kaanpattana kaankaset baeb yangyuen (The Evaluation of the Capacity Development and Life Quality of Sustainable Agriculture)*”. Bangkok: Office of the NESDB.
- Pasuk Phongpaichit and Baker, Christopher John. 2002. *Thailand, economy and politics*. Oxford: Oxford University Press.
- Sato, Hiroshi. 2005. *Enjo to Empowerment (Development and Empowerment)*. Tokyo: IDE-JETRO.
- Shigetomi, Shin’ichi. 1998. *Cooperation and Community in Rural Thailand: An Organization Analysis of Participatory Rural Development*. Tokyo: Institute of Developing Economies.
- Subhadrabandhu, Suranant. 1998. “Horticultural Production for Sustainability of Small Scale Farms in Thailand”. *Journal of the Japanese Society for Horticultural Science (JSHS)*. 67 (6): pp. 1236-1241.

Electric Energy Utilization in the Households of Albay Province, Philippines: Contexts, Conservation Practices, and Future Efficiency Strategies

Dr. Eddie Seva See

Project Leader, Professor 6 and Research Coordinator
BU College of Business, Economics and Management, BUCBEM
Daraga, Albay
ess4560@yahoo.com

Dr. Liwayway R. Ables

Co-Project Leader, Dean, BUCBEM

Dr. Melinda D. De Guzman

Associate Researcher, Graduate Program Coordinator, BUCBEM

Dr. Joseph L. Bartolata

Associate Researcher, Chief, Planning Office, BU

Mrs. Mary Ann M. See

Associate Researcher, Administrative Officer, BU

Abstract

This paper describes and analyzes the behavior of the households in Albay Province, Philippines on the energy use, practices and their contexts, and the appropriate efficiency use strategies. The study employed secondary analysis of data from 616 participants. It employed both qualitative and quantitative techniques in analyzing the data, namely “insight, intuition, reasoning, imagination and discernment” and “comparisons with discourses of experts, peer-accepted references, data from related literature” and centrality measures, gauges of dispersion and other related quantitative tools and standardized regression modeling.

The research findings showed that the households in the province already observed electrical energy conservation measures primarily to lessen electrical bill/cut down on expenses. There are, however, considerable potentials for more efficient electrical energy utilization practices among such households based on the proportion of the households which do not yet practice conservation measures, namely scheduling of appliance use (100%), not overheating/overcooling rooms (84.9%), scheduling home energy audit (84.7%), selecting energy efficient appliances (84.4%), scheduling computer games only on weekends (76.9%), air drying of clothes instead of electrical drying (66.2%), using electric fans only when people are around (63.8%) and using fluorescent lamps instead of incandescent lamps (55.8%).

It was further found out that the electricity utilization-conserving practices in the households “behaved” or manifested a distinguishable trend with respect to family energy consumption, educational qualification of the household heads, and number of children.

Future efficient electric energy utilization strategies comprise the continued observance of the now existing measures but to include the proportion of households that does not practice them yet by addressing the detected quantitative behavior between conservation practices and household contexts, and some creative behavioral (human) and technological approaches.

The researchers recommend the training of and dissemination of information to the households regarding the findings of this study on electrical energy conservation measures.

Introduction

Energy, the capacity to do work, comes in different forms- chemical, mechanical, thermal, solar and electrical. Its sources include wind, water, the sun, fossil fuels, and thermal gradients. This technical term is interesting even to the layman because it provides lighting and runs most of the appliances inside the households. The increased flow of material goods to the households such as electric washing machines and dryers, computers, digital video disk players, and television sets, has shifted household maintenance and recreation from human energy to electric energy. Electricity, according to Buesing (1980, p.194) will go on to be the dominant energy source among households for three reasons- “it is the highest grade and most versatile energy source available, it is the most universally available energy source already in the homes, and it can be generated from any number of future energy sources”.

OECD/IEA (1994) reported that with increasing disposable income and changes in lifestyles, households tend to move from the cheapest and least convenient fuels (biomass) to more convenient and normally more expensive ones (charcoal, kerosene) and eventually to the most convenient and usually most expensive types of energy (LPG, natural gas, electricity). Furthermore, the report highlighted that there is a correlation between choice of cooking fuels and the value of women’s time. Women who enter the formal workforce demand more convenience in their use of household fuels.

Among the different forms of energy, the alternating-current kind of electricity, supplied by power distributors from the generating stations through the transmission lines up to the service drop wires leading to household circuits, has become the most prevalent because it is the most convenient and the designed driver of many work, convenience and leisure machines and devices in the homes. It has the best prospects to increase energy utilization efficiency through the development of appliances and systems that optimize usage. It also “delivers excellent environmental performance, as it emits little CO₂, SO_x and NO_x, and brings safety and comfort to our lives, among other diverse benefits.” (Raivanshi, 2003). The facets of alternating current electricity-prevalence among households and best potentials for efficient usage and therefore contributing less to global warming and climate change- are the main reasons why it is the subject of this study, and it was the object of many previous investigations especially conducted during periods of energy crises. As Purchase (1980) has suggested, many reasons are apparent for wanting to reduce the amount of energy used and the money spent for energy. These include the desire to conserve natural resources, the wish to be independent of foreign suppliers, and the need to save money.

In general, families use electric energy directly for home heating and cooling, cooling and heating water, lighting, cooking, refrigerating, clothes' ironing, grooming and recreation, some of which creates negative impacts to the environment. According to Hogan (1980), the family and the environment are linked in such a way that the more energy we use from our present nonrenewable sources, the more problems we create for ourselves and future generation.

This paper highlights the energy utilization in the Province of Albay in the Philippines. Albay is a province in Bicol Region, with a population of more than 1.2 million, occupying a land area of almost 3,000 sq.km, and is comprised of three cities- Legazpi, Ligao, and Tabaco and 15 municipalities, namely: Tiwi, Bacacay, Malilipot, Malinao, Manito, Sto. Domingo, Daraga, Camalig, Guinobatan, Oas, Jovellar, Libon, Pio Duran, Polangui, and Rapu-Rapu. The province of Albay has an average household size of 5.22. Almost 50% of the total manufacturing establishments in Bicol is located in this province, including the cement factory in Palanog, Camalig and the Isarog Pulp and Paper Company in Daraga.

The province is one of the very few places in the country that produces geothermal energy. Yet it is not immune to global and national energy shortages and to high energy prices. It has, however, a very prominent feature- its commitment to address the issue of global warming and climate change, wherein misuse and neglect of energy resources is a major contributor. With three cities, and numerous urbanizing adjacent municipalities, the province has to contend with advancing economic activities and the household activities that come along with them, and regulating energy use.

A possible key to tackle this kind of situation is through efficient energy utilization. While conservation may be interpreted by some as "doing without energy use" (Purchase, 1980), efficient utilization signifies using energy (purporting the continual employment of energy) as input and expecting higher or optimum output. Inasmuch as electricity is the major source of energy that lights up and runs appliances in the households, this energy is the focus of this study to address the problem on determining data from the households in Albay province that would serve as basis for making policies and identifying interventions that could motivate and encourage these and/or other families to enhance or apply efficient energy use method to help solve the energy problem besetting or is forewarned to beleaguer the province in the future.

The rise in electric energy consumption in the province is expected in the coming years due to natural population growth, demographic changes such as ageing of the population and change in household number, and economic activity and development. This foreseen growth in electricity consumption, together with the growing alarms on global warming and climate change, the fluctuating but continuously soaring price of fossil fuels, and the financial crisis besetting the globe, will have serious consequences on the Albay family's electric energy use practices.

This paper describes and analyzes the behavior of the Albay households' energy use practices and their contexts, and develop the appropriate efficiency use strategies. The data that were generated from this project served as basis for the development of policies and the identification of interventions that might eventually partly help solve energy-related woes and enhance energy conservation practices by families, communities and local government units in Albay Province.

The theoretical bases of this research are the ecological systems approach of Cotrell (1955) which acknowledges that the preservation of values is related to the availability of energy, the energy concept of Toulaitos and Compton (1988, p. 154) referring to the term as a broad unifying concept in studying one's relation to environment, and the ecological systems approach to studying family managerial behavior proposed by Stedly (1969) and Hook and Paolucci (1970). These theories were not tested in this research but served as guides in discussing the findings.

Methodology

This research covered the households in Albay Province, Philippines as its population, employing secondary analysis of data uniquely described earlier in distinct and municipality-set different studies by Abainza, et.al (2009), Basa and Mesias (2009), Paliza and Olaguer (2009), Mata (2009), Ciruelos (2009), and Malto (2009). The preceding studies utilized survey and interview as their research strategies with questionnaire and interview guide as the data-collection techniques.

A systematic province-wide research using data from previous studies was made possible through a framework prepared by the research office of the Bicol University. The municipality-level research was undertaken by the undergraduate students. The two-stage sampling involved the selection of the municipalities and the selection of the samples from such municipalities. A margin of error of four percent at a confidence level of 95.44 percent and a proportion of fifty percent required a sample size of 616 households which was disproportionately distributed to the selected municipalities.

This study employed a combination of qualitative and quantitative analysis tools. In the analysis of the contexts of the households, this study made use of “insight, empathy, intuition, the elements of art, reasoning, imagination and discernment” and “comparisons with discourses of experts, and peer-accepted references. To probe the descriptive data on contexts, and electricity-conserving utilization practices, arithmetic mean, and standard deviation were applied. Frequency counts and percentages were also used. To examine the behavior, multiple regression was employed, technically to isolate the separate “influences” of or strength of trend of the dependent variables with the independent variables and to predict scores on the dependent variables. To determine the relative comparative importance of the various explanatory variables, standardized score or beta weights were utilized. The secondary analysis utilized a documentary analysis guide. The data in the referent investigations were collected using a questionnaire and an interview guide.

Results and Discussions

Household Profile

The relevant features of the households are presented in Tables 1.1 and 1.2, which reflects that the heads of the households in the province have reached elementary, secondary and collegiate schooling (at 31.5%, 34.2%, and 29.9%, respectively), are non-government employees (71.3%), earning an average of 11,222 pesos per month, support 4 children, consume 48.62 kWh of electricity per month and reside in a 45.4 sq. m. house floor area. In addition, Table 1.1 explains that the households have different or deviating features of house size, number of children, energy expenditure and income from one another, and therefore, in developing and introducing intervention programs on energy utilization to these households, such disparities will have to be taken into consideration.

Table 1.1. Centrality and dispersion values and related statistics of respondents by context

Centrality, dispersion and related statistical measures	Size of the house, sq. m.	Number of children	Energy consumption, kWh/mo	Monthly income, P
Mean	45.3740	3.63	48.6177	11221.0176
Std. Deviation	38.70312	1.999	42.41128	15074.31051
Minimum	0	0	0	400
Maximum	500	11	732	195000.00
Sum_____	_____27905	_____2211	_____29948.5	_____5745161.00

Table 1.2 shows that except for the vocational course, the participants are evenly distributed among elementary, high school and collegiate educations but a wide gap in the inter class proportions is seen in the profession which is predominantly non-government. Increasing disposable income and changes in lifestyles could tend to move households from the cheapest and least convenient fuels to the more convenient and normally more expensive ones and finally to the most convenient and usually most expensive type- electricity. The key determinants of energy demand in the household sector include prices and availability of appliances, disposable income and cultural preference (Masayasu & Takamasa, 1995)

Table 1.2. Frequency and percent distribution of respondents by context

Context	Frequency	Percent
Educational qualification of the head		
Elementary	101	31.5
Secondary	110	34.2
Vocational	14	4.4
College	96	29.9
Total	321	100.0
Profession of the head		
Government employee	47	14.7
Non-government Employee	229	71.3
Self-employed	45	14.0
Total	321	100.0

Existing electricity-conserving utilization practices

Table 2 shows the distribution of households based on the existing electricity-conserving utilization practices. About one-seventh of the households in the province did not observe unplugging the electrical cords when not in use. Extrapolated to the whole population, this could be as many as 33,000 households. According to the US Department of Energy (2009), “about 7.5% of the electricity used to power home electronics is consumed while the unplugged product is turned off”. All electronics draw power even when they are turned off. Even under such condition, they can use up from 5 percent to 25 percent of a home’s electric bill (Answerbag, 2010).

Almost 50% of the households, which could be as high as 115,000 households did not schedule the ironing of clothes. Ironing consumes as much energy as twenty 50-W bulbs. It also takes several hours to accomplish the job. Every time it is performed, the flat iron is to be heated first, which consumes a lot of energy. Carrying out the task in large batches of clothing at one time avoids several-time reheating and therefore saves energy (Eskom, 2010).

Based on the data shown in Table 2, it would seem that the people were not yet familiar with energy-efficient appliances since 84.5 percent of them do not select energy-efficient appliances when purchasing. Electrical appliances proffer a huge potential for energy cutback. New refrigerators use 30% less electricity than those built before 1999. Recent models of computer monitors and televisions sets offer substantial reduction in power usage and are likewise equipped with low-power standby mechanisms (Eskom, 2010). Most families have yet to recognize the value of not overheating or overcooling rooms. New models of air-conditioners have thermostats that could be operated by remote. The households in Albay seemed unfamiliar to home energy audit with only a little more than 15% of them practiced such conservation measure. Many households do not practice air drying of clothes in lieu of electric drying. A clothesdryer is usually “the second or third highest electricity-consuming appliance in the home with its heating nature similar to water heater and flat iron”(Meralco, 2010).

More than half of the households still used incandescent lamps over fluorescent lamps. Lighting energy can account for about 20% to 30% of the household's electric bill (Meralco, 2010). "Compact fluorescent lamps (CFLs) can use up only 25% of the energy being used up by incandescent bulbs for the same luminance." (Meralco, 2010). "A 16-W CFL produces the same light as a 60-W incandescent bulb, CFLs also last 8 times longer than the incandescent type." (Meralco, 2010) "While small fluorescent lamps are now popular in urban areas, low wattage incandescent lamps (15-25 W) are still widely used. Introducing compact fluorescent lamps to replace low wattage lamps may not be cost-effective, but lighting quality would improve greatly. In the long run, as income increases, so will lighting demand, and compact fluorescent lamps will offer economic and environmental benefits" (Masayasu & Takamasa, 1995)

Meanwhile, more one-half of the households seemed unmindful of a running electric fan even if there were no people using it. People have developed the habit of turning on an electric fan to use it. But when leaving the area, they usually forget that there is an electric fan that is operating. None of the households practiced the scheduling of the use of appliances. There are still a substantial number of households who do not turn off lights even if they are not necessary. Lighting the house can eat up from 20% to 30 % of the household's energy consumption (Meralco, 2010), putting the light off when it is not needed may save a lot of electricity for the family. Almost one-half of the respondents do not open their windows for ventilation. This concern may have something to do with the design of the windows. There are houses whose open windows could become entry points for burglars and robbers. It is interesting to note, however, that there were few households that practiced scheduling of computer games of their children during weekends.

Table 2.1. Frequency and percent distribution of households that employ electricity-conserving utilization practices

Electricity-conserving utilization practices		Frequency	Percent	Valid Percent	Cumulative Percent
Unplugging of electrical cords when not in use					
Valid	Do not practice	89	14.4	14.4	14.4
	Practice	527	85.6	85.6	100.0
	Total	616	100.0	100.0	
Scheduling of ironing of clothes					
Valid	Do not practice	267	43.3	43.3	43.3
	Practice	349	56.7	56.7	100.0
	Total	616	100.0	100.0	
Selection of energy-efficient appliances					
Valid	Do not practice	520	84.4	84.4	84.4
	Practice	96	15.6	15.6	100.0
	Total	616	100.0	100.0	
Not overheating and not overcooling rooms					
Valid	Do not practice	523	84.9	84.9	84.9
	Practice	93	15.1	15.1	100.0
	Total	616	100.0	100.0	
Scheduling of home energy audit					
Valid	Do not practice	522	84.7	84.7	84.7
	Practice	94	15.3	15.3	100.0
	Total	616	100.0	100.0	
Air-drying clothes instead of electric drying					
Valid	Do not practice	407	66.1	66.2	66.2
	Practice	208	33.8	33.8	100.0
	Total	615	99.8	100.0	
Missing	System	1	.2		
	Total	616	100.0		
Use of fluorescent lamps instead of incandescent lamps					
Valid	Do not practice	344	55.8	55.8	55.8
	Practice	272	44.2	44.2	100.0
	Total	616	100.0	100.0	
Use of electric fans only when there are people around					
Valid	Do not practice	393	63.8	63.8	63.8
	Practice	223	36.2	36.2	100.0
	Total	616	100.0	100.0	
Scheduling of appliance use					
Valid	Do not practice	616	100.0	100.0	100.0
Turning off lights when not in use					
Valid	Do not practice	89	14.4	14.4	14.4
	Practice	527	85.6	85.6	100.0
	Total	616	100.0	100.0	
Opening windows for ventilation					
Valid	Do not practice	289	46.9	46.9	46.9
	Practice	326	52.9	52.9	99.8
	Missing	1	.2	.2	100.0
	Total	616	100.0	100.0	
Allowing kids to play computer on weekends					
Valid	Does not practice	153	24.8	76.9	76.9
	Practices	46	7.5	23.1	100.0
	Total	199	32.3	100.0	
Missing	System	417	67.7		
Total	616	100.0			

Reasons for practicing energy conservation

The primary reason of the households for energy conservation is to lessen expenses on electricity (Table 3). This kind of response is supported by Buesing (1980) who elucidated that economics is the dominant factor influencing consumers' decisions. It seems, however, that these families tend to see only the personal economic value of conservation and do not associate energy use with the socio-environment, particularly the now well-known issue on global warming and climate change, an observation in the Albay setting that appears to diminish the strength of Touliatos' and Compton's (1988) concept of energy as "a broad unifying concept in studying one's relation to environment".

Table 2.2. Frequency distribution and rank of participants by reason for conserving energy

Reason for conserving energy	Frequency	Rank
Lessen electric bill	439	1
Cut down expense	321	2
Avoid fire and related hazards	280	3
Avoid health risks	121	4

Behavior and practices with respect to the household contexts

The quantitative analysis of the data (Table 3) shows that of all the contexts, energy consumption trends closest, in the opposite direction, with the practices of unplugging the cord when not using electricity, scheduling the ironing of clothes and turning off lights when they are not in use, signifying that as consumption increases, the tendency is for the household not to perform these energy-conserving measures. On the other hand, selecting energy-efficient appliances, not overheating and not overcooling the rooms, and using fluorescent lamps instead of incandescent lamps, seemed to be most influenced by educational qualification with a positive trend, meaning the higher the educational qualification of the household head, the more likely the households will apply these electricity conserving techniques. Turning off electrical fans when there are no people around has a negative behavioral direction with the number of children- as the number of kids increase, not practicing this conservation measure will be more likely.

Table 3. Regression equations between electricity-conserving utilization practices and the household contexts

Electricity-conserving utilization practice trended with household contexts	Modeled behavior (multiple regression equations, unstandardized and standardized)	Significant for the context (at alpha =)	Meaning
Unplugging electrical cord when not using electricity	$\hat{y}q = 0.898 - 0.001xs - 0.023eq - 0.014xp + 0.018xnc - 0.002xec + 0.000xmi$ $Zy = -0.079Zs - 0.074Zeq - 0.019.Zp + 0.101Znc - 0.223Zec + 0.067Zmi$	Energy consumption, 0.001	Unplugging of electrical cord seems to trend closest with increasing electrical consumption. The behavior is statistically observable in all households.
Scheduling ironing of clothes	$\hat{y}q = 0.697 + 0.001xs - 0.046eq + 0.016xp - 0.008xnc - 0.002xec + 0.000xmi$ $Zy = 0.073Zs - 0.113Zeq + 0.018.Zp - 0.033Znc - 0.247Zec + 0.116Zmi$	Energy consumption, 000	Scheduling of ironing of clothes seems to trend closest with increasing energy consumption. The behavior is statistically observable in all households.
Selecting energy-efficient appliances	$\hat{y}q = 0.266 - 0.002xs + 0.058eq - 0.005xp - 0.021xnc + 0.000xec + 0.000xmi$ $Zy = -0.126Zs + 0.172Zeq - 0.006.Zp - 0.104Znc + 0.042Zec + 0.008Zmi$	Educational qualification, 0.008	Selecting energy efficient appliances seems to trend closest with higher level of education. The behavior is statistically observable in all households.
Not overheating and not overcooling the rooms	$\hat{y}q = 0.074 - 0.000xs + 0.037eq - 0.057xp + 0.007xnc + 0.000xec - 0.000xmi$ $Zy = -0.001Zs + 0.153Zeq - 0.105.Zp + 0.051Znc + 0.027Zec - 0.026Zmi$	Educational qualification, 0.019	Not overheating and not overcooling rooms seems to trend closest with educational qualification. The behavior is statistically observable in all households.
Using fluorescent lamps instead of incandescent lamps	$\hat{y}q = 0.398 - 0.001xs + 0.091eq - 0.032xp + 0.007xnc - 0.001xec - 0.000xmi$ $Zy = -0.053Zs + 0.219Zeq - 0.035.Zp + 0.030Znc - 0.060Zec - 0.031Zmi$	Educational qualification, 0.001	Using fluorescent lamps seems to trend closest with higher educational qualification. The behavior is statistically observable in all households.
Using electric fans only when there are people around	$\hat{y}q = 0.627 - 0.000xs + 0.018eq - 0.038xp - 0.035xnc - 0.001xec + 0.000xmi$ $Zy = -0.023Zs + 0.044Zeq - 0.040.Zp - 0.145Znc - 0.064Zec + 0.071Zmi$	Number of children, 0.014	Using electric fans only when people are around seems to trend closest with number of children. The behavior is statistically observable in all households.
Turning off lights when not in use	$\hat{y}q = 0.898 - 0.001xs - 0.023eq - 0.014xp + 0.018xnc - 0.002xec + 0.000xmi$ $Zy = -0.079Zs - 0.074Zeq - 0.019.Zp + 0.101Znc - 0.223Zec + 0.067Zmi$	Energy consumption, 0.001	Turning off light when not in use seems to trend closest with energy consumption. The behavior is statistically observable in all households.
Opening windows for ventilation	$\hat{y}q = 0.612 - 0.000xs + 0.023eq - 0.026xp - 0.034xnc - 0.001xec + 0.000xmi$ $Zy = -0.018Zs + 0.054Zeq - 0.028.Zp - 0.141Znc - 0.073Zec + 0.071Zmi$	Number of children, 0.017	Opening windows for ventilation seems to trend closest with number of children. The behavior is statistically observable in all households.

Future efficient electric energy utilization strategies

Based on the extent of the participants' adoption of the existing electricity conservation practices, any plan for future electric energy utilization strategies must include the same but shall target the proportion of the household population that did not, at the time of the data collection, practice such, namely scheduling of appliance use (with 100% of the households who do not practice), not overheating/overcooling rooms (with 84.9%), scheduling home energy audit (with 84.7%), selecting energy efficient appliances (with 84.4%), scheduling computer games only on weekends (with 76.9%), air drying of clothes instead of electrical drying (with 66.2%), using electric fans only when people are around (with 63.8%) and using fluorescent lamps instead of incandescent lamps (with 55.8%).

The rest of the conservation measures are future efficient electric utilization strategies with present non-apppliers from 14% to 47% of the households. These strategies could extend to purchase of heat-efficient flat irons and scheduling of ironing time, purchase of energy efficient refrigerators, television sets, musical machines, electric fans, and air-conditioners, purchase of energy efficient electric lamps (fluorescent lamps), purchase of energy efficient electric cookers and water heaters, purchase of energy efficient computer sets, and maximizing use of heat from the sun for drying purposes. Recommended strategies from the participants themselves include the conduct of seminars on energy conservation in the barangay and raising awareness on energy conservation through posters.

Similarly, in her study, Herman (1980) forwarded the following suggestions: change attitude as to personal and family needs through an energy conservation ethic that emphasize on conserving now to help provide energy resources for future generations, substitute human energy for mechanical; air dry clothes instead of using a clothes dryer, read a book instead of watching TV, adjust time schedules, select more energy-efficient equipment, and search out reliable information on energy conservation

Conclusions and Recommendations

Based on the findings of this study, the following conclusions are drawn:

- The contexts of the households present a potential for greater electrical consumption in the future;
- The percentage of those who do not practice electrical energy conservation practices is substantial, manifesting a huge potential for efficient use opportunity;
- A distinguishable behavior is demonstrated between certain energy conservation practices and energy consumption, educational qualification of the household head and the number of children by the quantitative models developed, presenting an opportunity to modify the energy conservation practice through the aforementioned contexts; and

- Future efficient electric energy utilization strategies could be discerned from the responses of the participants in this study and from previous and similar research works.

Based on the foregoing conclusions, the following recommendations are forwarded:

- Further studies to verify the findings of this research with reference to the behavioral models developed should be conducted;
- Development of an efficient electrical energy utilization extension program that may include:
 - Identifying the non-practitioners of energy conservation in this study as the clientele;
 - Preparation of information/awareness materials and training modules regarding the energy conservation and related measures identified in this study; and
 - Capability building of would-be trainers on the subject
 - Conduct of training and information dissemination campaigns on the matter
- Re-education campaigns to adjust family lives towards efficient electrical energy utilization

References

- Abainza, Allaine, Ma. Shiela C. Cimanés, Jennifer M. Fajardo, Jomarie B. Mallette, & Angelica Otivar. (2009).
- Energy Conservation Practices in Selected Households in Five Barangays in Legazpi City. Unpublished Undergraduate Thesis, College of Business, Economics and Management, Daraga, Albay.
- “Answerbag”. Online. Available <http://www.answerbag.com> April 29, 2010
- Basa, Gerlie S. & Princess Joy T. Mesias. (2009). Energy Conservation Practices in Selected Households in Ald
- Albay District, Legazpi City. Unpublished Undergraduate Thesis, College of Business, Economics and Management, Daraga, Albay.
- Buesing, James. (1980). The Energy Efficient Home of the Future. Cutting Energy Costs. The 1980 Yearbook of Agriculture. US Department of Agriculture.
- Ciruelos, Jimbert C. (2009). Energy Conservation Practices in Selected Households in Barangay Belen, Tiwi, Albay. Unpublished Undergraduate Thesis, College of Business, Economics and Management, Daraga, Albay. “Conserving Electricity.” Online. Available <http://www.eskom.com.za> April 29, 2010
- Cotrell, F. (1955). Energy and society. Westport, Conn.: Greenwood Press. Energy in developing countries: a sectoral analysis. OECD/IEA, 1994.

- Farmer, LaVerne. (1980). Managing Your Home to Save on Energy. Cutting Energy Costs. The 1980 Yearbook of Agriculture. US Department of Agriculture
- Herman, Glenda M. (1980). Adjusting Our Lives To Stretch Energy. Cutting Energy Costs. The 1980 Yearbook of Agriculture. US Department of Agriculture
- Hogan, M.J., (1976). Energy conservation. Ph.D. dissertation. Michigan State University. Hogan, M.J. & B. Paolucci. (1979). Energy conservation. Home Economics Research Journal. 7:211-18.
- Hogan, M.J., D. Goss, W.W. Olson, & B.L. Yust. (1980). A Family Checklist to Conserve Energy. Cutting Energy Costs. The 1980 Yearbook of Agriculture. USDA.
- Hook, N. & B. Paolucci. (1970). Family as ecosystem. Journal of Home Economics. 62:315-18. Ishiguro, Masayasu and Akiyama, Takamasa. Energy demand in five major Asian developing countries: structure and prospects. World Bank discussion papers; 277. Washington, D.C., 1995.
- Leitmann, Josef. Energy-environment linkages in the urban sector. Urban Management Programme, UNDP/UNCHS/The World Bank. Washington, D.C., 1996.
- Malto, Mark Anthony R. (2009). Energy Conservation Practices in Selected Households in Ald Albay District, Legazpi City. Unpublished
- Undergraduate Thesis, College of Business, Economics and Management, Daraga, Albay.
- Mata, Argie M. (2009). Energy Conservation Practices in Selected Households in Barangay Lacag, Daraga, Albay. Unpublished Undergraduate Thesis, College of Business, Economics and Management, Daraga, Albay. "Electricitips".2010. Meralco. Online. Available <http://www.meralco.com.ph> April 27, 2010.
- Oladosu, G.A.& A.O. Adegbulugbe. Nigeria's household energy sector: issues and supply/demand frontiers. Energy Policy. Vol. 22, No. 6, pp. 538-549, 1994.
- Paliza, Sherjun & Vincent Eduard Olaguer. (2009). Energy Conservation Practices in Selected Households in Guinobatan, Albay Unpublished Undergraduate Thesis, College of Business, Economics and Management, Daraga, Albay. "Province of Albay". Online. Available <http://www.islandsproperties.com> January 21, 2010.
- Purchase, Mary E. (1980). Fifty Ways to Save Your Energy Dollars. Cutting Energy Costs. The 1980 Yearbook of Agriculture. USDA.
- Raivanshi, Anil K. (2003). R&D strategy for lighting and cooking energy for rural households. Current Science. Vol. 85. No. 4. August 25, 2003. Report of The Expert Group Meeting on Changing Consumption Patterns in Human Settlements. United Nations, New York, 1997.
- Soma Shekara Sreenadh Reddy Depuru. (2009). Smart Energy Management for Households. University of Toledo, Toledo, Ohio, USA.
- Steidl, R.E. (1969). An ecological approach to the study of family managerial behavior. Pennsylvania State University.

Overcoming Fuel Crises Using Social Safety Nets: The Case of “Kerosene-to-LPG Conversion Program” in Sundanese Village, West Java, Indonesia

Arata Mariko

Visiting Researcher

National Museum of Ethnology (Minpaku), Japan

nengmari@yahoo.co.jp

Abstract

In response to the global food and fuel crises, the Indonesian government launched a “kerosene-to-LPG conversion program” in 2007. This program aims to convert the main fuel used for household cooking from kerosene to liquefied petroleum gas (LPG) in order to save on the subsidy budgets. The Indonesian state energy company, PT. Pertamina, distributed a cooking stove and a canister for LPG to every low-income household to replace kerosene stoves, kerosene supplies were then reduced.

This paper examines the impact of the “kerosene-to-LPG conversion program” on rural livelihoods in a Sundanese village in West Java province, and identifies the factors that served as safety nets during the fuel crises.

The data gathered from the respondents indicate that there were some problems as regards this program. Some low-income households were not included on the distribution list, while some households have received gas appliances that were out of order; and for fear of explosion, some of them hesitated to use them. Small shops in rural areas could not afford many spare canisters, and gases are often sold out. Kerosene oil became so scarce that people had to go out of their villages to seek for it, and wait in long queues.

These problems were overcome by the people by using, not only alternative fuels, such as firewood and electricity, but their social infrastructure. For example, an old widow could get help from her kin because of tight kinship relations that they fostered through various means. Local business customs also enabled ordinary people to start small businesses easily, such as selling firewood. Their social systems functioned as safety nets, saving people who otherwise would have had serious problems in cooking food.

Keywords: food-fuel crisis, safety net, kinship relations, business customs, Sunda

Introduction

In the beginning of 2007, the Indonesian government started a kerosene-to-LPG conversion program following the global food-fuel crisis that began in 2004. This paper examines its impact on rural livelihoods in a Sundanese village in West Java province. This paper also highlights the factors that functioned as grassroots safety nets when people faced the fuel crises.

Before the conversion program was carried out in the western part of Indonesia, the use of LPG was quite limited in quantity, and the main fuel used for cooking were kerosene, firewood and wood charcoal (i). Above all, kerosene had been commonly used among lower and lower-middle class households for daily cooking not only in urban areas, but also in rural areas.

I surveyed kitchen facilities in 13 households in a village in West Java Province in 2002. All of them had one or more kerosene stove(s), but no LPG stove. LPG stoves were mostly used by city dwellers in wealthy class, or food industry such as restaurants.

It is easy to buy LPG in urban area, because providers daily go around the city in cargo truck carrying filled canisters. In rural area where gas users were rare, villagers had to go to the shop in town. What should you do if gas ran-out when you are cooking? Gas facilities were more expensive than kerosene stove. One has to buy not only the cooking stove, but also a canister. Moreover, the smallest canister sold at that time was for twelve-kilogram gas. When a household runs out of gas, it could not be re-filled in small amount. Its empty canister has to be changed with a full-refilled one. It would also be too expensive for poor people to buy twelve-kilogram LPG at a time.

Kerosene was easier to obtain. Villagers could buy it at nearby kiosks called *warung* just like other daily commodities. Though it is a little more expensive than the in the town markets or shops, it is more convenient not only because you can save your time and transportation fee, but also because you can buy them in small amount.

In east settlement of B village with approximately 50 households, there was nine *warung* at that time. Five specialized on foods, while four sold daily commodities including kerosene. Villagers could easily go and buy kerosene just a few minutes walk from home. If only you bring a small plastic tank, you could buy just as much kerosene as you needed. If the nearest *warung* happened to have no stock, you could go to other *warung* nearby, or request for small amount from one of your neighbors if the need is immediate.

A typical *warung* in rural area is a small kiosk, which is set as a part of a house and is operated by a housewife or a married couple from morning until night. It is a popular business for women, since it needs only small capital, and can be operated at home while taking care of domestic affairs and her children at the same time.

Warung owners in B village usually go to the nearest town once a day to purchase

kerosene. Most of them take public minibus, which takes about half an hour. They go out at around three o'clock in the morning, and come back at around five o'clock in the morning. Before the conversion program, they used to drop-off an empty plastic tank in oil station on the way to the market, and received their tank filled with kerosene on the way home. In this way, they could provide fuel to many households in their neighborhood, because shoppers bought only a few liters at a time.

Worldwide fuel crisis and ‘kerosene-to-LPG conversion program’

The fuel conversion program aimed to shift main fuel for cooking from kerosene into LPG (Figure 1). The Indonesian state-owned oil and gas company, Pertamina, distributed a set of LPG facilities to every low-income household and food vendors at no charge, in order to replace kerosene stoves. Distributed facilities included a cooking stove, a gas regulator, and a small three-kilogram canister. Kerosene supplies were reduced to accelerate the conversion process. It was started early in 2007 in Jakarta and was spread to other districts in Java, South Sumatera, and Bali. In May 2010, Pertamina claimed that there is no longer a demand for kerosene most parts of Java, some parts of Bali, and South Sumatera. Now, the program is being extended to Sulawesi, Kalimantan, and other parts of Sumatera [The Jakarta Post: 18 May 2010 and 22 May 2010].



Figure 1. A distributed gas stove (left) and a kerosene stove

The Indonesian government initiated this program in response to the worldwide fuel crises, coupled with the rapid escalation of crude oil price from 2004 to 2008. In Indonesia, increasing prices of oil products is a key factor in the price increase of commodities. Indonesian government has, therefore, lowered oil prices with subsidy in order to stabilize consumer prices. The cost of fuel subsidy had become so large because of fuel crises that the government tried to save budget by converting household fuel to cheaper LPG (ii).

According to the Jakarta Post, international market price of kerosene in September 2007 was Rp 5,688 per liter, which is equivalent to 0.4 kilograms of LPG worth Rp 2,920. With subsidy, kerosene was sold at Rp. 1,818 per liter, while LPG was sold at Rp 1,385 per 0.4 kg. Pertamina estimated that the government would save up to Rp. 25 trillion per year, if most households would switch to gas. Only Rp. 2.4 trillion is allocated for the distribution of LPG facilities in state budget proposal in 2008 [The Jakarta Post: 10 Sept. 2010].

Problems and influences of the fuel conversion program

When conversion program was implemented, a number of issues and problems arose. Some low-income households could not get a free stove set. Many people, especially the elderly, hesitated to use a gas stove for fear of explosion. There was an observed poor quality of the equipment that has been distributed, and people were not familiar as regards the use of gas and the stoves. During the early stages of the conversion program, there were instances of fires in densely-populated areas in Jakarta, because of gas leak explosion. In Japan, LPG canisters are, in general, located outside the houses and gas company's staff would change it with spares. Once cooking stove is installed, you do not have to think how it is connected to a canister. While in Indonesia, if gas is finished, you have to remove a regulator from an empty gas canister, and connect it to a refilled one by yourself.

Table 1. Shift of average wage of agricultural laborer in West Java Province 2001-2007 (Rp/half day : 4 to 6 hours)

	Furrowing	Planting Rice	Weeding
2001	9,049	7,039	7,681
2002	11,100	8,106	9,020
2003	12,192	10,296	10,306
2004	11,315	10,075	10,158
2005	12,661	11,604	10,934
2006	18,842	15,478	16,712
2007	21,487	18,071	18,783

This table is made by the quoter based on Badan Pusat Statistik [2008a: pp.10-12].

No spare canisters were distributed. If gas was finished while cooking, you have to bring an empty canister to a vendor and change it with a filled one. Warung sold filled canisters, but they went easily out of stock, for they could afford only a few spare canisters. A three-kilogram canister's price was Rp.150,000 (gas excluded) in September 2008, and was fairly expensive compared to people's income. For example, West Java Province's poverty line in 2008 was Rp. 190,824 per capita/month [BPS 2008c: p.586]. In rural areas, average wage of agricultural laborers was about Rp. 20,000 per half day in 2007 (see table 1) (iii), while a factory worker gets monthly salary of about Rp. 1.000.000.

Consequently, many people still needed kerosene even after conversion program is completed in the area. Pertamina was determined to limit kerosene supply, though. People had to go to a distant oil station, and wait in a long queue in order to buy only a few liters. Table 2 shows consumer prices of fuels in rural West Java from 2001 until 2007. Kerosene price per liter was Rp. 2653 in 2007, which was three times the cost in 2001, while agricultural workers wage was raised two and half times in the same period.

Table 2. Shift of rural consumer price of fuel in West Java Province 2001-2007

Year	Kerosene (Rp/liter)	Wood Charcoal (Rp/kg)	Firewood (Rp/40kg)
2001	684.09	1,007.89	5,551.57
2002	1,034.41	1,127.99	6,154.80
2003	1,134.33	1,357.79	7,431.97
2004	1,185.06	1,392.46	8,416.90
2005	1,587.09	1,570.90	9,013.49
2006	2,653.17	1,896.88	11,019.74
2007	2,653.33	1,768.42	13,324.08

This table is made by the quoter based on Badan Pusat Statistik [2008b: pp.203, 207, 210].

In August 2008 when kerosene ration was limited, its price soared up. Some stores sold kerosene for Rp. 7,000, while others sold it at Rp. 12,000. LPG went also in short supply in the end of 2008, since canisters were out of stock. Mass media critically reported about the situation of the people who were distressed about the conversion program.

Safety nets by kinship

When I visited West Java in September 2008, however, I found that villagers had overcome these troubles with various tactics. Let us look into kinship relations first. Sundanese has a population of more than 30,000,000, and is the second largest ethnic group in Indonesia that resides mainly in West Java and Banten Province. Majority of the Sundanese are Muslims.

They usually have deep connections with their kindred under their bilateral descent social system. Their residential system is loosely uxorilocal. A newly-wed couple tends to live with the wife's parents. They would separate and have their own household when they already have a baby or the wife's sister gets married [Harsojo 1971; Watanabe 1992 etc.]. Their household composition is flexible, though. They often foster their grandchildren or their sibling's children. Single elders desire to join the household of one of his/her (or his/her sibling's) offspring. If not, one of his/her descendants would have to accompany them at least at night.

Let me introduce a case in my place of fieldwork. I have once lived in a village (called the B village) in Bandung Regency, West Java Province for about a year to conduct research on Sundanese language and foodways, and afterwards have been visiting there intermittently for about eight years [Arata 2004; 2008]. This paper is mainly based on my observation and interviews when I visited the area in 2008 and 2009 (both for a few days at a time, from August until September).

An old widow named Amih (all the names of villagers are anonyms) once lived in B village. When her husband died in 2007, she moved to nearby C village, because her only child Euis lives there. The C village is only 30-minute walk from B village. Figure 2 is Amih's family tree from 2002 to 2009. Those who live together in one house are encircled. In 2008 (figure 2-B), Euis and her husband had six children. Each of their three children had separate households, but they all lived within a few-minute walk in the same village. The fourth child, Reni, was already married but was living with Euis. The fifth and sixth children were still very young. When Amih's husband died, she stayed at Euis's house for a while. Then she sold her old house, and bought one near Euis'. Euis fifth child, Rini, sleeps with Amih. Rini was a primary school student. She ate sometimes at Amih's house. Meanwhile, Toni, the first child of Euis used to live with Abah and Amih in B village when he was still single (Figure 2-A). The third child Tini has moved to Amih's house together with her son, after her divorce with her husband in 2008 (Figure 2-C).

Euis had lived with her husband's parents after marriage. As Sundanese usually do, however, Euis' family and her parents had often visited each other. Amih was also very close to Euis' parents in-law. The affinity relationship between a husband's parents and his wife's parents is called *besan* in Sundanese, and supposed to be very intimate. Amih also helped Euis' and her parents in-law when they held rituals. She worked to prepare offerings and feasts together with their neighbors in C village. When Amih's family held rituals at home, or Amih's late husband Abah gave performances of traditional arts, Euis used to come and stay overnight to help them, together with her children, mother in-law and mother in-law's sister. They also helped each other on financial matters. Abah and Amih paid part of the ceremonial cost when Euis' children got married. When Amih bought a house in C village, Euis', Toni and Tini bore some of the expense.

In other words, even though Amih and her descendants had long lived in separate village independently, they have built up firm kinship relations in which generalized reciprocity [Sahlins 1968; 1972 etc.] works. They are accustomed to helping each other, giving what the others need without hoping direct return.

In C village, gas facilities were distributed from July to August 2008. Euis and Reni got one each, because they were counted as two households even if they live in a same house. One of their stoves was out of order, but they just used the other one, since they usually cook and eat together. Amih was not in the distribution list of C village, because she had newly moved. Her name was already deleted from the list in B village, too. She was forced to go on using her kerosene stoves. When it became difficult to buy kerosene from nearby warung, Amih asked her grandchildren or their spouses to get some at

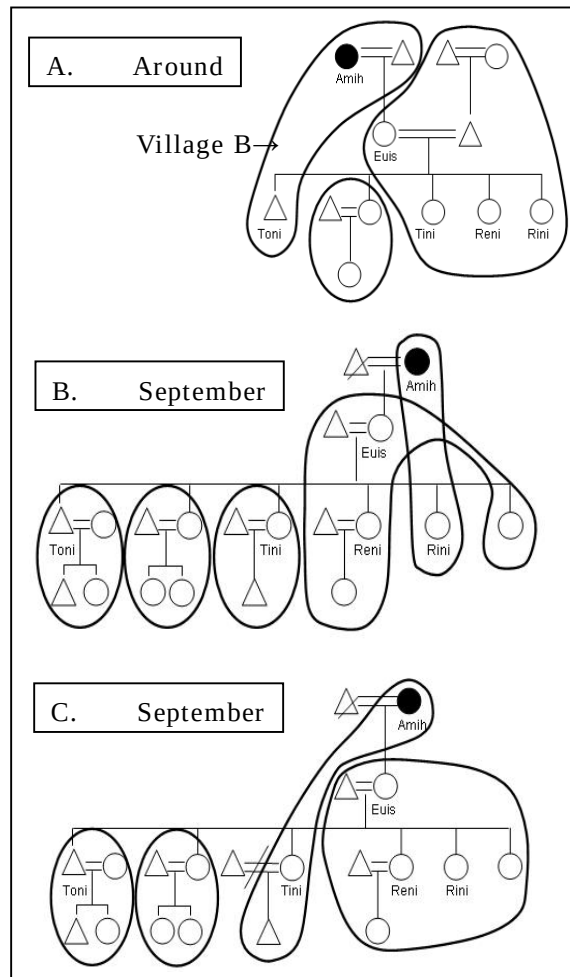


Figure 2. Shift of household members among Amih's family. (Members of each household are surrounded by a line. Part of the family tree omitted)

distant stores. Otherwise, it would be difficult for an old-aged woman to go out of village, wait in a long line to get kerosene, and bring it back home, since the only public transportation in C village were omnibus horse-drawn buggies. She also got remainder of kerosene from her families who already got their gas stoves. Sometimes she brought a kettle to her daughter to boil water. After Tini moved to Amih’s house, they used Tini’s gas stove together. Other family members also helped each other. If they ran out of gas while cooking, they brought their pan or pot to nearby relative’s kitchen, and continued to cook.

They shared cooked food, too. Amih usually cooked foods for herself, but when she is busy with her duty as a midwife, she sometimes ate at her daughter’s house. During Ramadan, people usually eat twice a day, once right after sunset (*buka puasa*), another before dawn (*sahur/saur*). In order to have *sahur* ready in time, wives need to get up at around two o’clock. If they failed, all the family members would have to fast for a day without preparation. Usually, there are some people who would wake up the residents. In urban areas, the callings are not so loud considering the non-Muslim neighbors. In northern part of Bandung where I stayed, a person walked around and just knocked the gates of Muslim residences with a pole for a few times. While in rural areas where almost 100 percent are Muslim, it is quite uproarious. In C village, members of the young men go around the village and play musical instrument, sing and dance to wake villagers up.

I stayed at Amih’s house for a few days in 2008. Amih and I did not plan to fast because we did not feel well. We had no kerosene to cook either. Amih, however, said that she would be ashamed if she did not take *sahur* since it shows to the neighbors that she is not fasting. As a result, we three went to Euis’ at three o’clock in the morning to take *sahur* that she cooked. Tini and her son who lived next door, joined bringing their own foods. Including Reni who lived together with Euis, there gathered family members of four generations from four households.

This kind of daily commensality often appears not only during Ramadan, but also in ordinary months. If a host invites guests to special events like rituals, the host must prepare food for feast at his/her own cost. While in daily commensality, members usually bring his/her own food each from every household. They sit in a circle on the floor, putting all the foods in the center. When eating, everyone takes foods to his/her plate as much as he/she likes. They share dishes freely, but usually take rice only from the container brought from his/her own household. Here we can see their consciousness on independent household clearly.



Figure 3 Family members from four households gathered at *sahur* at three a.m.

However, they are willing to share rice, too, if somebody begs for it. Especially if you are begging food for little children, you do not have to hesitate, or pay back in return afterwards. For instance, once during Ramadan, Toni's eight-year-old son came to Amih's at around three thirty a.m. to beg cooked rice. His mother got up late, and she had no time for warming rice. He was given warm rice in his plate, went back home and ate it.

Moreover, according to Sundanese custom, if guests come in when you are eating, you must invite them and eat together. A frequent guest from neighborhood usually turns the invitation down modestly, but an unusual guest from distant place is recommended to accept it. He/she had better enjoy food together and show his/her appreciation in order to show respect to the host. Therefore, it was natural for Amih who was in short of fuel, and I who was visiting her from Japan, to go and eat at her daughter's house even at three o'clock at night.

Safety nets by alternative tools and fuels

People also use alternative tools and fuels. In rural areas, many residents still used firewood at earth-made furnace. In east settlement of B village, where I made research about kitchen facilities of 13 households in 2002, all had one or more kerosene stoves, but 11 also owned. Based on observation, among them, four households used only kerosene stoves for daily cooking, two mainly used furnaces, seven used both.

Those who use the furnace daily were not affected so much by the fuel crises. The price of firewood (Figure 4) also rose, but they



Figure 4 Amih's neighbor sawing firewood.

usually took it from forest or bamboo grove for themselves. Some of them sold distributed stoves and regulators to their neighbors, and canisters to *warung*.

On the other hand, there were people who had rarely used furnace, but began to use after the fuel crises. Even if they had no earth-made furnace, it is easy to make a temporary one with bricks or stones just as they always do when they prepare foods at rituals.

Amih had an earth-made furnace, which she used only when she cooks large amount of food. When kerosene supply became scarce, she started to cook for daily meal in the furnace using scrap woods from her old house. She asked one of her neighbors to chop them, and gave her small money to show her gratitude. Some of the financially-capable people such as factory workers and teachers shifted to modern tools. They bought an electrical rice cooker. Some also used it for cooking foods other than rice. For example, a *warung* owner used it to cook and keep bakso warm. Bakso is a kind of fish-ball soup, often sold at *warung*.

Safety nets by business customs

Before the fuel crises, no one has ever sold firewood in B village. When the kerosene supply was reduced, there appeared firewood business (Figure 5). As we see in the cases of *warung* and peddlers, it is quite common in Indonesia for an ordinary villager to start his/her own business, selling things or services to neighbors or relatives if only he/she had a chance and enough capital.

What they sell can be such common things that anyone can make oneself or buy in a nearby market, or simple services that do not need any special skill. Japanese might hesitate and feel somewhat ashamed to get profit by selling such things with close acquaintances since he/she is supposed to help them without direct profit. While in Indonesia, it is a matter of course to make profit even from close friends and relatives in neighborhood, for providing time and labor for any productive activity.



Figure 5. Villagers started firewood business.

This custom allowed villagers to start business quickly and supply firewood at a relatively reasonable price. The main purpose of business is of course to get profit. However, they also consider and care for the socially- vulnerable individuals who have no or little access to firewood for lack of physical strength or time. The same is true in the case of *warung* owners. One of the *warung* owners in B village mentioned that she could afford only three spare canisters for *warung* business. Purchase price of three-kilogram gas refill was Rp. 15,000, while the selling price was Rp. 17,500. She

usually goes to the market only once a day, but after the conversion program, she went to LPG dealer by motorcycle if she runs out of stock. She could not make much profit from this gas business. But, she felt she had to do it in order to supply the needs of the people.

Conclusion

This area has gradually recovered from fuel crises as people got used to gas facilities, and crude oil prices came down because of the global depression that started from September 2008. When I revisited in September 2009, *warung* had already increased their stocks of canisters. Villagers could buy gas at nearby *warung*, and kerosene was also supplied though its price was far more expensive than before.

In 2008, people obtained and shared fuels and cooked foods utilizing various means such as generalized reciprocity among kindred, customs of small business or paid services among neighbors, or older/newer kitchen facilities like furnaces and electrical rice cookers. The social safety net, particularly kinship and social ties, played a key role in ensuring food security for the elderly and the poor.

Notes

-
- i) According to Indonesia Energy Balance Statistics 2002, total energy consumed in household use was as follows: light oil products 412,312 Terajoule(TJ), solid fuels other than coals 547,493TJ, electricity 123,816TJ, city gas (LNG) 267TJ, liquefied petroleum gas (LPG) and natural gas liquid 96TJ [BPS 2003: 20-21]. The area using city gas (LNG) is highly limited, and no city gas facilities are seen around my place of fieldwork. Electricity is used in almost every household, but it is usually used only for lighting, television, radio, CD/VCD/DVD player, water pump and so on, not for cooking. Electrical cooking stoves such as IH cooking heater or electric hot pots are unfamiliar in Indonesia. In early 2000's when I lived in B village in west Java, possession of electrical rice cooker or microwave oven was limited to upper-middle/high class households in urban areas. In B village, I found a few household that had an electrical jar to keep rice warm, but no one possessed an electrical rice cooker or microwave oven.
 - ii) Indonesia has its own oilfield, and had been exporting crude oil. However, after the collapse of Soeharto regime, oil production had got down and it started to import crude oil since 2004.
 - iii) Their usual working time is half day; about six hours from six o'clock in the morning until noon.

Reference

- Arata, Mariko. 2004. Indonesia Sunda no shoku bunka: gengo jinruigaku teki kanten kara (Sundanese Food Culture in Indonesia: from Linguistic-Anthropological approach), Dissertation, Graduate University for Advanced Studies.
- . 2008. Sekai no shoku bunka 6: Indonesia (World's Food Culture 6: Indonesia), Tokyo: Nōbunkyō.
- . 2010. 'Nenryō kiki o norikoeru safety net: Indonesia seifu no “touyu kara propane gas e no tenkan program” o megutte (Safety nets to overcome fuel crises: on “kerosene-to-LPG conversion program” of Indonesian government)', In Ueda (ed.), 2010, pp. 61 -75.
- BPS (Biro Pusat Statistik/Badan Pusat Statistik). 2003. Neraca Energi Indonesia 1998-2002, Jakarta: Biro Pusat Statistik..
- . 2008a. Farm Wage Statistics in Rural Area 2001-2007, Jakarta: Badan Pusat Statistik.
- . 2008b. Rural Consumer Price Statistic in Indonesia 2001-2007, Jakarta: Badan Pusat Statistik.
- . 2008c. Statistical Yearbook of Indonesia 2008, Jakarta: Badan Pusat Statistik.
- Harsojo. 1971. 'Kebudayaan Soenda', In Koentjaraningrat (ed.), Manusia dan Kebudayaan di Indonesia, Jakarta: Djambatan, pp.305-326.
- Sahlins. Marshall D. 1968. Tribesmen, Prentice-Hall.
- . 1972. Stone Age Economics, New York: Aldine
- The Jakarta Post. <http://www.thejakartapost.com/> (June 1, 2010)
- Ueda, Akiko (ed.). 2010. GLOCOL Booklet 03: Food and Human Security, Osaka: Osaka University.
- Watanabe, Atsushi. 1992. 'Eating Opportunities and Its Social Context of a Village in South Banten, West Java, Indonesia', Southeast Asian Studies, 29(4):422-453.

E-Kontradiksyon: Cheap Energy for Environment Cost and the Tricky Relationship between the Marinduque Electric Cooperative (Marelco) and Marcopper Mining Corporation

Randy T. Nobleza
anditonasipetro@gmail.com

Abstract

The paper hopes to contextualize the present situation of energy and environmental crisis in Marinduque by establishing the direct relationship of Marelco and Marcopper. The juxtaposition of cheap energy and environmental cost is based on the relationship between the local cooperative and multinational company.

The Introduction provides a brief history of the local cooperative and its connection to the multinational mining company. The paper looks into the relationship between Marelco and Marcopper towards their efforts to balance the effects of mining and energizing the province of Marinduque.

There are two main methods used in the paper, one is video ethnography and the other is documentary analysis. Both were also used in the graduate study of the researcher entitled “E-Kontradiksyon or Blindspots of Development.”

The Results and Discussion is presented through video screening and a mobile exhibit. The mobile exhibit articulates the self-observation of selected communities in the province on mining and electrification. Meanwhile, the video screening dwells more on the observation of the tricky relationship between Marcopper and Marelco.

The paper found that the fate of any island province’s development and progress is in the hands of some politicians and local electric cooperatives. The people of Marinduque did not have any choice but to unite against the operations of the multinational mining company. By the time Marcopper stopped operations, Marelco insisted that they had already come prepared with the National Power Corporation’s generation function. But the province already paid the price.

Introduction

The Marinduque Electric Cooperative (Marelco)

The logo of the lone electric company in Marinduque has a big letter M in the middle, the green map of the province on a white background on the right side and touching on the left side the gray portion emphasizing year 1973 when the cooperative was on its introductory stage of operation. The left portion of the letter M with the lightning sparks symbolizes an electric discharge emanating from Marelco as the sole distributor of electricity in the province of Marinduque, and the white rays of the electric disgrace is divided by the black streaks represent the six towns which were the only areas electrified during that time. Generally, the big letter M represents the province of Marinduque, Marelco and the Moriones festival with which this heart-shaped island is acclaimed worldwide (Marelco: 2007).

Marinduque about 30 years ago has nothing to be proud of apart from having a good reputation of being the most peaceful province in the Philippines and being blessed with natural scenic spots and rich culture. But progress and development had been very elusive, primarily due to the lack of the infrastructures which could only be possible with a sufficient supply of electricity. According to its mission and vision, Marelco aspires to be as a dynamic service institution and catalyst in the socio-economic development of Marinduque. Building Marelco as an institution provides total quality service in the socio-economic development of Marinduque.

The Marinduque Electric Cooperative, Inc. (Marelco) was organized on March 23, 1973, and registered and incorporation on March 27, 1973 with Registration No. 43. Immediately, thereafter, the cooperative obtained Loan "A" of P20, 447,000.000 from the National Electrification Administration (NEA) to finance the construction and operation of its electric power system consisting of electric generation equipment, transmission, distribution and service lines and all substation transformers, meters and other equipment necessary for its operation. (Marelco 1997)

The Marcopper Mining Corporation (Marcopper)

According to Marinduque Council for Environmental Concerns (MACEC) which represents the broadest alliance of differing groups, non-governmental organizations and peoples organization in the province opposing large scale mining, Marinduque is 80 percent mineralized. During the last 30 years of operations, the Marcopper Mining Corporation has tremendously damaged almost half of the province. Three out five towns were affected directly by the mining operations.

The mining of copper in the once sacred lands of Matabang Bundok was jointly owned by Marcos (49percent) and by Placer Development Limited (39.9%) until 1987, thus the firm was named as Marcopper (Marcos Copper?) Mining Corporation. (Labay2003)

According to local experts and researchers, during the ten years of operation until 1990, Marcopper was able to extract 64,372 tons of copper concentrate, 18,049 tons of pure copper metal, 3,460 kilograms of silver and 453 kilograms of gold. But what was the real price Marinduque has to pay? (Ibid)

Based on the social history of mining in Marinduque, on the 6th of December 1993, Maguila-guila Dam collapsed before dawn. The village people who were still slumbering in their deep sleep were shocked when rushing silt laden with acidic poison and heavy metals swept their houses and properties. Two children in their morning sleep were carried away by the monstrous wall of mine wastes. Agricultural crops were gutted by the rushing poisonous wastes.

While on the 24th March 1996, the concrete plug that was surreptitiously made in the base of Matabang Bundok that connect the Pit to Makulapnit Creek burst, releasing 3-4 million tons of mine tailings as flood to Makulapnit Creek down to Boac River. Over five days the discharged of mine tailings continued at the rate of 5-10 cubic metres per second down to Boac River filling up its bed with poisonous brew of wastes. About 4,000 people from almost 24 villages were affected by the fiasco. (Labay, 2003)

Mining and Electrification in the Province of Marinduque

Marinduque is quite a small place located in the center of the MIMAROPA region but it has significant history of struggle with political clans and multinational companies. During the 400 years of Spanish Colonization in the country, the province was under successive regimes of church orders specifically the Franciscans, Jesuits, Diocesians and Recoletos. Incidentally, the most significant movement in Marinduque is spearheaded by modern day priests.

There's a great problem with mining, it's interrelated to all other problems if you're going to trace the roots of the mining problem you would notice that it's essentially the problem in general of Marinduque. Marinduque Electric Cooperative was established to provide electricity during the evening. But when Marcopper came to the province, Marelco was able to get cheap electricity but when they sell it to the consumers, they sell the excess power for a higher price. (Dahil nakakuha ng murang kuryente mula sa excess power pero mahal naman ang benta sa mga consumer). (Malapad2009)

Based on the Short History of Mining in Marinduque (Macec 2003):

Towns	Bigger Picture	Effects and Implications
Sta. Cruz	The first town directly affected by the mining operations	It virtually destroyed the mountains, rice fields and bodies of water. An estimated 24,000 tons of mining waste is being dumped everyday in the last 16 years of operations to Calancan Bay
Mogpog	The next town that was affected during the erection of Maguila-guila Earth Dam and its eventual collapse	When the tropical storm "Monang" it washed way the earthen dam which ruined property, livelihood and even took lives. Marcopper killed the Mogpog river which is the only source of food, potable water and irrigation to the whole town
Boac	The last town that was affected by Marcopper when it dumped mining wastes on March 24, 1996 to the 27 kilometer Boac River	Boac river was declared biologically dead. Despite more than 6 years have passed very quickly, the victims remain helpless and was not yet compensated. The river is not yet being cleaned until now

Statement of the problem

The paper looks at the relationship of a multinational company and a local cooperative and its end-result. The problem of mining and electrification in the province of Marinduque is tricky because of the following reasons: given there are existing laws such as the Mining Act of 1995 there are still loopholes; despite legislation, the problem still persists because of the manner of implementation. Therefore, the problem is in a vicious cycle worsened by erring and irresponsible politicians.

Electric cooperative helps the government in its rural electrification program by servicing those living in far-flung areas. As duly registered warriors of the liberation army of light, celebrate the happy fact that electrifying the Philippine countryside is the most successful revolution for progress in the last four decades. From the vantage point of a common experience, appreciate these dramatic achievements:

- nightly shining lights shine forth from over 8 million homes, proclaiming the glory and success of the popular struggle to drive away the forces of darkness
- 17,000 industries and business, located in the rural areas, facilitated the availability of electric power, triggered massive economic development; and provided for our people equal employment.
- geographically, by now 2009, over 35,000 barangays have become modern villages. Our kind of revolution, fought with the weapon of light (not with armalite) has won for our rural folks such benefits as, among others, televisions, cellphones, interests, state of the art appliances; and electric-driven potable water systems and irrigation projects.

But then again, problems continue to persist given such and such achievements:

Please don't....go on and continue to steal electricity from the cooperative so we could ensure a decrease of "system loss" and our operations could run more smoothly. Please forbid ... to encounter any problems with the machines of National Power Corporation or with the Marelco electric lines, we would not experience any inconvenience with long hours of "brownouts." Please spare us... from some consumers who are not so generous with clearing the outgrowth of their branches and twigs of their trees. So we would not experience any sudden brownout. (Marelco News 1996)

Methodology

Video Ethnography

On one hand, video has been used in more recent times to replace film as the dominant storage and choice. On the other ethnography has been the popular method of choice for anthropologists and other social scientist to study particular cultures and societies.

Ethnography refers to both method and output of the study. It is a particular social research method to document the characteristics of a particular group of people in a specific milieu. Ethnography also entails that the end-result of a study must be evaluated using differing perspective to assure a more accurate picture of reality. In the case of the study ethnography is particularly useful because it uses not only video as a tool for documentation but also photos, blogs and texts as well. (Nobleza, 2009)

Documentary Analysis

According to Wikipedia, documentary analysis was conducted to achieve a contextual understanding of the policy and practice environment within which rural and remote practice. Relevant documents were obtained and analyzed. The relevant documents include policy statements, technical reports, nursing practice regulations and standards, as well as reports related to nursing education for rural and remote areas from regional, provincial and national government offices.

Results and Discussion

For the last 15 years, nothing has been heard and discussed about the shutdown of the Marcopper Corporation (MMC). Since the inception of Marinduque Electric Cooperative (MARELCO) which was established to supply the whole province with energy along with the existence of Marcopper. For the duration of full operation, the mining company supplied the power Marinduque needed for a cheap price. Until December 1993, after the Maguilaguila Earth Dam

collapsed and flooded almost the whole town of Mogpog and years after, when the Makulapnit Creek burst on March 1996. The incident/accident left 24 communities and about 4,000 families in Boac submerged with tailings and flood. Marcopper was closed down after the people of Marinduque decided to put the matter in their own hands.

At present, Marelco claimed that there is no relationship between them and Marcopper Mining Corporation. The power supply comes from NPC SPUG's three power plants located in separate generation sites in Balancanca Port in Mogpog (NPC Power Barge 120), Bantad, Boac (NPC Power Plant) and Brgy. Cagpo, Torrijos (Cagpo Diesel Power Plant).

However, in 1984 to address the problem on generation, Marelco dealt directly with Marcopper when the latter provided its excess power in Marinduque up to September 1988. During the Aquino administration, NPC, Marelco and Marcopper entered into a tripartite agreement when the mandate of providing power source was transferred to NPC pursuant to RA 6395. Based on the agreement, NPC shall continuously provide electricity to Marelco through Marcopper's own generating plants. NPC's responsibility shall be to provide fuel required to generate the electricity to be sold by Marcopper to them, and to pay the monthly billing net of fuel costs. This lasted until NPC has established its own generating plants in 1996 until Marcopper has shut down its operation totally in the early part of 1997 due to persistent public clamor arising from the impact of the mine tailings spill on the Boac River.

In the study of E-Kontradiksyon or Blindspots of Development, E refers to both electronic at ethnographic which is juxtaposed to the praxis of contradictions. It deploys a couple of concepts and documents the interaction. Especially in small places or to provinces which is not that big, it's important to compare and connect different models of development. (Nobleza 2009)

Demographic data as of December 31, 2008

Municipality	Population	Potential consumers	Membership	No. of members served/ house connected	Percentage of members served	Percentage of house connection over potential consumer	No. of barangays	No. of barangays energized	%
Boac	48504	9836	10092	10148	100	102	61	58	95
Buenavista	19271	3868	3253	2889	89	75	15	15	100
Gasan	29799	5943	5727	5607	98	94	25	25	100
mogpog	31330	6540	6487	6480	100	99	37	37	100
Sta. cruz	60055	12014	11159	10247	93	87	55	55	100
Torrijos	28000	5641	5007	4652	93	82	25	25	100
Total	216959	43842	41725	40203	96	92	218	215	99

According to Marelco, being the sole distributor of electricity in the province it has been in existence for 37 years and has a mandate pursuant to PD 269 as amended by PD 1645, of providing total electrification of Marinduque on an area coverage basis. Moreover, at present it has energized 216 out of 218 barangays which is equivalent to 99 percent energization of the province. With the support and assistance of the national government through the national electrification administration, Marelco is continuously providing electricity even to the farthest sitios in far flung barangays.

The last 25 years of Marelco's existence and persistence amount to the 25 years of service to the people of Marinduque. But there are still remote areas in the province where people are still waiting for your services. Electrification is the bridge to community development especially in places like our province. (Red 1998)

Statistical data January to December 2008 with comparative figure of 2007

Month	Kwh purchased			Kwh sold			Systems loss		
	2007	2008	Inc/Dec	2007	2008	Inc/Dec	2007	2008	Inc/Dec
January	1,698,108	2,435,582	737,474	1,425,240	1,952,597	527,356	257,443	459,081	201,637
February	1,956,132	2,281,508	325,376	1,633,251	1,865,030	231,779	307,127	393,916	86,789
March	2,116,622	2,244,476	127,854	1,718,638	1,855,827	137,189	377,274	366,881	19,393
April	2,791,932	2,749,418	(42,514)	2,297,482	2,213,568	(83,914)	468,560	510,304	41,744
May	2,793,878	2,473,822	(320,056)	2,273,096	2,027,270	245,826	494,881	422,638	72,243
June	2,680,264	2,413,488	(266,766)	2,220,632	1,868,811	351,821	433,799	520,802	87,003
July	2,526,056	1,909,250	(616,806)	2,056,044	1,441,015	615,029	444,960	449,195	4,235
August	2,582,496	2,476,327	(106,169)	2,123,228	2,009,614	113,614	434,365	442,941	8,576
September	2,540,784	2,455,424	(85,360)	2,085,206	2,008,954	76,252	430,282	422,493	7,788
October	2,409,918	2,579,535	(169,617)	1,967,289	2,123,454	156,165	418,696	431,764	13,067
November	2,389,070	2,640,593	251,523	1,951,330	2,184,594	233,264	414,140	431,372	17,232
December	2,329,313	2,317,877	(11,436)	1,945,192	1,847,586	97,606	361,128	447,438	86,310
Total	28,814,573	28,977,300	162,727	23,696,630	23,398,329	298,309	4,842,655	5,298,826	456,170

Beyond measuring up to the yardstick of economists in terms of growth in GNP, trade and investment, tourism, infrastructure, high technology and the like, there is an urgent need to translate these indicators of development into real and positive changes in the quality of people's lives. Amidst the economic strides and progress resulting from energizing the countryside, what truly matters most is providing a better life for the people, especially those in small and remote communities.

Please do not ... skip and forget paying the monthly bills to ensure continuous supply of electricity. Please don't ever...rely on reports of other consumers who don't have power supply in their communities so that the brownout would not last long. Please try to refrain... from submitting incomplete set of documents, make sure to comply with all the "requirements" to enjoy service and do not delay your payment so you could enjoy energy supply right away. (Marelco News, 1996)

The former president Fidel Ramos, in his message, emphasized that even as we strive to power and modernize the countryside, we must equally seek to empower our countrymen through the efficient and effective delivery of basic services such as electricity. This is imperative to ensure that they do not remain at the receiving end of development but also become partners in achieving faster and more sustainable growth.

Marelco and our local government have been partners in the development of our municipality. Progress and growth in economy, services to our people is visibly seen. Our streets and homes are well lighted and our waterworks system that flows into the heart of our town is dependent on Marelco's supply of electricity. (Madrigal: 1998)

It would be a fitting occasion to mention that although our country as a whole is experiencing difficult times brought about by the present financial crisis, Marelco had risen to meet the demands of its ever-increasing customers with untiring efforts and selfless dedication. Hopefully, Marelco and its present leadership will continue to strive hard in meeting new challenges and share in the development of our country in the coming next century and beyond. But above all, it must adhere to the basic cooperatives principle of service before profit. (Lim1998)

History of rate charges

Year	npc generation cost	Government revenue	Marelco dist. Cost	effective rate
1991	1.609			3.95/kwh
1992 June 1993	1.7835			4.20/kwh
July 1993 w/ adjustment	1.9635			4.20/kwh
	2.2348			
Aug. 1993 to feb. 2004	2.2348		4.316+PPA	
March 2004	4.1034	0.0398	2.0151	6.1583/kwh
Oct. 2005	6.0825	0.0398	2.0342	8.1565/kwh
Nov. dec. 2005	6.0627	0.08331	1.8711	8.7669/kwh
2006	6.3311	1.024	1.8711	9.2262/kwh
2007	6.3322	1.0159	1.8019	9.15/kwh
2008	6.3332	1.0471	2.0612	9.4415/kwh

Total electrification cannot be easily achieved if Electric Cooperatives were not organized and operated pursuant to PD 269 as amended tasking the government thru the national electrification administration to provide every tenable support and assistance to ECs which was providing the necessary capital in the form of loans and subsidies. Through this government program, Marelco has energized the province's six municipalities since 1982 and presently all of its 218 barangays. The missionary electrification however does not end there because

more and more unviable sitios are clamoring to have electricity soonest. (Bueno2010)

Moreover, according to Marelco, electricity is practically a major contributor in the economic development of the province through distribution of electricity. Marelco, being the sole franchise holder of distribution of electricity in Marinduque, has performed its role as catalyst in its economic development. Mandated to spread the benefit of electricity even in the farthest barangay, it has served and improved the lives of more than 38,000 member-consumers while activities such as agriculture, fishing, tourism and communication continued to register a positive growth. Commerce and industry in the province is in constant forward movement as manifested by the growing number of business establishments, construction of more commercial buildings, and expansion of banking services through the installation of on and off-sites Automated Teller machines.

Conclusion

On one hand, total electrification of the Philippines was the reason why electric cooperatives under PD269 as amended by PD 1645 organized and operated as non-profit, non-stock service oriented electric cooperatives. Ever since its inception, it has become a national policy of the government foster growth in the realm of social, economic and political life of the people. Nonetheless, it remains not an easy task. Maintaining a distribution system in the franchise area of six municipalities, Boac, Mogpog, Sta. Cruz, Gasan, Mogpog and Torrijos requires intensive capital and long term of investment recovery.

On the other hand, mining is considered the most environmentally destructive man-made activity. Many have suffered from the environmental effects of mining operation not only in the province but also in other parts of the world. Before the worst mining accident in country's history, the Marcopper Mine tailings spill, the Boac River was the most generous body of water for the many riverside residents. It was clean and clear with lots of fish. The soil was fertile and gardens were abundant. Generally, their foods used to be free. However, when Marcopper tailings smothered the pristine river system, people lost access on the river for livestock, fishing, laundry, bathing and agriculture. Health risk also increased because of the effect of contamination of toxic materials. Calancan Bay in Sta. Cruz slowly died due to the tailings after years of direct and deliberate sea discharge.

But the question now is—can the electric cooperative maintain its task of providing electricity to the unviable areas thru a stock, profit oriented cooperative? Every stock organization focused on profit as its primary motive. Marinduque is a calamity prone province and with the global warming phenomenon, no place on earth is safe now. If typhoon strikes again as what happened in 2006 where four strong typhoons hit our province all in the same year, shall the member-consumers

willingly sacrifice their share capital to sustain the rehabilitation as they are also victim of the same?

Looking back, prior to 1973, the franchise of distributing electricity in the province was managed by the local government units (LGU) and few private distribution utilities. However, distribution of electricity was confined only in the poblacion of respective municipalities as construction of lines for additional barangays was very costly and not feasible to earn profit and recover investment at the shortest time possible. It's only when Marelco was established since 1973 that the total electrification in Marinduque was achieved.

Although it could not be denied that mining in Marinduque has contributed much to the economic life of its people, particularly for cheap electricity. The province and the nation as a whole has benefited from the bulk of taxes it has provided, to the provision of electricity from its excess power and to employment of highly paid local workers.

Pretty much all of the problems has little to do with politicians but more with what goes beyond. Marinduque is a 4th class province, right in the heart of Southern Tagalog but there are over 40,000 malnourished out of 280,000 total population. Poor Marinduque, the problem of small-island provinces is the same problem of the whole country.

References

Primary Sources

Eduardo Bueno. Marelco general manager. June 8, 2010. Ihatub, Boac, Marinduque

William Bobis. Marelco News writer. June 15, 2010. Ihatub, Boac, Marinduque

Fr.Allan Malapad. Social Action Commission director. March 12, 2010. Boac cathedral

Miguel Magalang. Macec executive director. March 15, 2010. Poras, Boac, Marinduque

Secondary Sources

Marelco news official organ 1996, 1998,2010

Memorandum of Agreement 1991, 1995, 1996

National Electrification Administration letters

Marelco 30th annual general membership meeting brochure 2007

Marelco 25th anniversary souvenir program 1998

Marcopper Mining Corporation letters 1996

Willy Red. Sta. Cruz Municipal Mayor. Remarks. Mareclo 25th anniversary souvenir program

Vicky Lim. Gasan Municipal Mayor. Remarks Mareclo 25th anniversary souvenir program

Fidel Ramos. President of the Republic of the Philippines. Remarks. Mareclo 25th anniversary souvenir program

Ofelia Madrigal. Buenavista Municipal mayor. Remarks. Mareclo 25th anniversary souvenir program

Other Sources

Acaso, Harry John D. (2009) Consumer Behaviors on the Services Offered by the Marinduque

Electric Cooperative (MARELCO). Masters in Public Administration. Marinduque State College Graduate School.

Miranda, Carlos P. (2003) Socio-Economic Effects of the Imposition of Purchased PowerAdjustment (PPA) by Marelco to the Consumer. Masters in Public Administration. Marinduque

State College Graduate School.

Labay, Panchito. (2003) Social history of Mining in Marinduque.

Identifying Environmental Changes in Mt. Data Watershed, Bauko, Mt. Province, Northern Philippines: Implications to Sustainable Management

**Ranell Martin M. Dedicatoria¹,
Carmelita M. Rebancos, Leticia E. Afuang and Ma. Victoria O. Espaldon²**

Abstract

This study examined the environmental changes in Mt. Data watershed, Northern Philippines over the last 50 years and how such changes affected sustainable management. The site is a protected area and forms part of the Kabatangan Ancestral Domain, home of the Kankana-eyes.

Using an exploratory case study approach, the researcher conducted key informant interviews and validated findings with the community. Oral accounts revealed that the conditions of Mt. Data watershed have drastically changed over the last 50 years. The area was once thickly forested but today, forests have been converted into vegetable farms and only mere patches of forests remain. Alongside this changing land use, wildlife populations also declined. There has also been high influx of migrants.

*As such, the indigenous knowledge systems and practices (IKSP) -- specifically those concerning wildlife species, which used to be indicator of environmental changes in the area -- are mostly confined to elders and have not been transferred to younger generations. One example is the Red-throated Pipit (*Anthus cervinus*) locally called “killing,” a migratory bird that signifies the start of winter season in the area. Likewise, the observance of agricultural rituals has also been disregarded.*

Although there is a collective consciousness of the IKSP’s importance among the people, modernization has already set in. Thus, there is a danger that IKSP would be lost due to rapid environmental, social, economic, and political changes.

Today, although Mt. Data watershed is considered important by the residents, the resource has become a “tragic common” commodity due to commercial farming. There is a need to re-open the minds of both migrants and locals to make them recall the goodness of a sustainably managed watershed. Their IKSP, which adheres to the principles of sustainable development, should be revived and strengthened so that the once rich ecosystem may be restored.

Keywords: indigenous knowledge, protected area, sustainable management

¹ MS Environmental Science, School of Environmental Science and Management, University of the Philippines Los Baños (SESAM-UPLB)

² Guidance Advisory Committee, UPLB Graduate School

Introduction

A number of studies have already been conducted to find out how people relate with the environment. The end goal is to determine ways to help resource managers understand the important role of people's experiences and perceptions when establishing policies and practices related to natural resource management.

In the Philippines, the most biologically diverse areas are often occupied by indigenous peoples (IPs). Their indigenous knowledge systems and practices (IKSP) have enabled the IPs to tap their natural resources in a sustainable manner, and at the same time ensured that their lands are protected for many generations. The link between life and land is deep-rooted for IPs because it is where their culture, language, and traditions have evolved and developed. Their ancestral domain over these lands is crucial to their survival (Indigenous Perspectives Vol. 8 No. 1, 2006). The IKSP in Cordilleras, Northern Philippines is very diverse -- complementing the region's unique biological and physical resources. Local variation in terrain, elevation, climate, and hydrologic conditions has brought about a rich diversity in biological resources (Boquiren, 2003).

IKSP are the direct outcome of the IPs' responses to certain needs consisting of adaptive mechanisms which have allowed them to survive and thrive within their given socio-cultural and biophysical conditions. As keepers of traditional knowledge, IPs practice the sustainable use of resources. Conservation and equity seemed new concepts during the 1992 Rio Earth Summit but for IPs, these principles have been around for a long time (Malanes, 2006).

However, as landscapes change and people migrate and relocate, environmental perception and values can be affected (Lacerna, 1997). Alongside, these also change the environmental conditions of a certain area. "Human perceptions have far reaching consequences for definitions and uses of resource systems. 'Habitats' and 'resources' do not exist by themselves. They become so through human processes of perception, cognition, and action. Traditionally-derived perceptions and cultural orientations of people residing within and using a habitat determine the basic conditions of their work and their impact on their ecosystems" (Ferrer, 1992 as cited by Lacerna, 1997).

As such, this study examined the environmental changes of Mt. Data Watershed in Bauko, Mt. Province over the last 50 years and its implications to sustainable management. This study could generate information that will help in forming an effective conservation program in the area. Likewise, results of the study could lead to the enhancement of useful conservation practices and possible removal of harmful practices.

Methodology

Study Area

This study focused on Mt. Data Watershed in Bauko, Mt. Province located at 16° 59' 0" N, 120° 52' 0"E. The watershed is classified as a pine forest under the premises of Mt. Data National Park (MDNP), a declared protected area (PA) by the Philippine Department of Environment and Natural Resources (DENR) and a key biodiversity site of the Cordillera Administrative Region (CAR), Northern Philippines. The watershed also forms part of the Kabatangan Ancestral Domain, located in the southern part of Bauko and home of the Kankana-eyes. Kabatangan is the Kankana-ey term for pine forested area.

Research Design

An exploratory case study approach was used to determine the past and present conditions of Mt. Data Watershed. This type of study is considered as a prelude to social research. The study employed the participatory rural appraisal (PRA) to gather pertinent data and documents. A site reconnaissance followed by a courtesy call was conducted in early January 2010 to determine how actual data gathering would proceed. The site reconnaissance helped determine the study's scope.

To draw out important events and other aspects of culture, key informants including Sangguniang Barangay representatives, Mt. Data Hotel workers, and elders were interviewed. Interviews were informal and conversational although questions were pre-determined. A group of *oblantes* (farm workers) were also interviewed to identify collective problems. Their stories and historical accounts were validated using available secondary data. During the key informant interviews, two local guides were employed since most residents do not speak Tagalog. Results of the study were then presented and validated with select residents of community.

Results and Discussions

Environmental conditions of Mt. Data watershed have drastically changed over the last 50 years. What was once a sustainably managed watershed has now become a "tragic common" commodity. This is evidenced by losses in terms of forest cover as well as local extinction of wildlife. These negative changes in the environment can also be equated with the gradual erosion of IKSP in the area. The rich culture of the Cordillera region matches its rich biological resources. However, there is a danger that their IKSP would be lost due to rapid environmental, social, economic, and political changes.

Over time, the IPs have been replaced by migrants. Their IKSP were mostly confined to elders and have not been transferred to the younger generations. There used to be a Council of Elders but at present, the major decision-making body is the Sangguniang Barangay. Coupled with the development of farm-to-market roads and onset of modernization, Mt. Data watershed became more exposed resulting to further

conversion of its pine and mossy forests into vegetable farms, which serve as the residents' main source of income. Table 1 presents a comparison of the past and present conditions of Mt. Data Watershed.

Table 1. Comparison of the past and present conditions of Mt. Data Watershed

PARAMETER	PAST	PRESENT
Forest cover	The place was once thickly forested and served as hunting ground of IPs. Logging concessions started in 1946 while commercial farming was introduced by the Chinese merchants in the 1950s.	Grasslands are scattered throughout the area, mixed with remaining patches of pine forests.
Presence of wildlife	Diverse species of birds abound in the watershed. Large mammals were hunted by locals as food.	Few wildlife are found in the area. Some birds have already become locally extinct.
Protective functions of forest resources	Due to the area's mountainous terrain, the forests serve as protection against erosion.	The region was severely affected by Typhoons Ondoy and Pepeng in 2009 which resulted to massive erosion and flooding in downstream communities.
Demography	The expansion of Heald Logging Company's operation caused an increase in population with the continuous hiring of laborers.	There is a high influx of migrants in the area. Most IPs have migrated into La Trinidad and/or Baguio City.
Local controls	The Council of Elders is consulted when making community decisions.	Members of the Sangguniang Barangay serve as decision-makers in the barangay.
Agricultural practices	Indigenous practices are being employed.	Inorganic farming, which uses fertilizers and pesticides, is the more common practice. No fallow period is observed.

Forest Cover

Mt. Data watershed was once thickly forested and a hunting ground of IPs and natives from other areas. In 1946, the logging concession of the Heald Lumber Company established the sawmill in nearby barangay (also called Mt. Data). This eventually led to the watershed's deforestation; conversion of remaining forests to commercial farms followed thereafter. The advent of commercial farming in the 1950s as introduced by Chinese merchants as well as the establishment of Mt. Data Hotel in 1960 further catalyzed forest cover loss. As a result, there are only few Kabatangan areas that remain to this day. Ocular observations conducted in 2010 verified the extent of forest cover loss particularly in Sitio Osok, Mt. Data; grasslands are scattered throughout the area or mixed with remaining forests.

Presence of Wildlife

Since forests serve as habitat for wildlife, there are many adverse effects of forest denudation to them. Dwindling forest cover results to habitat loss and fragmentation. This eventually leads to decrease in species number and diversity and increase in number of tolerant species such as exotic rats and other fruit bats. Often, species response negatively when there are no habitable patches in the fragment. In the end, its population is likely lost and would find it hard to recover.

Aside from forest cover loss, wildlife mortality is also affected by the practices of locals in the domain. In Mt. Data, any form of wildlife is considered food by the locals regardless of its conservation status. The practice of consuming wildlife as food is common in most indigenous communities. However, with the continuous increase in population, the battle has become a “survival of the fittest” where people and wildlife compete.

Local frogs (tukak) called “bakkak” and “kadow” are eaten. Respondents claimed that the introduced giant marine toad (*Bufo marinus*), which they call bullfrog, is absent in the area. The reptile “banyas” or monitor lizard (*Varanus salvator*) is considered a viand while the house lizard (*Hemidactylus frenatus*) called “alutiit” is considered poisonous.

In terms of its avian populations, the Red-throated Pipit (*Anthus cervinus*) is a migratory bird which indicates a change of weather in the area. Respondents said that it is first seen during the last week of October or first week of November to signify the arrival of the last typhoon for the said year and marks the start of winter season. During its first sighting, the species lacks its red throat. The red spot signifies breeding. After two weeks or so, this becomes more prominent. Alongside the change in its color comes the opening of sunflowers.

The traditional practice called *ikik* is strictly prohibited by the Kabatagan Ancestral Domain Indigenous Peoples’ Organization (KADIPO). *Ikik* is done by lighting a tree during the night to attract and trap avian species. Trapped birds are either eaten or sold to pet traders. Elders reported that some avian species which were abundant before are no longer sighted and/or very scarce today. These include the Montane Racquet-Tail (*Prioniturus montanus*), Philippine Tailorbird (*Orthotomus chloronotus*), and White-cheeked Bullfinch (*Pyrrhula leucogenis*). Most species became locally extinct due to poaching and hunting.

On the other hand, *anop* is the practice of hunting mammals. Mt. Data watershed is almost devoid of mammalian populations which have been lost due to excessive hunting by the locals. Large mammals such as *bowet* (squirrels), *bango* (wild pigs), and *ugsa* (deer) are absent in Mt. Data watershed but are still present in nearby Mt. Kalawitan. Cloud rats which have been reported by Heaney and Balite in 2006 are also possibly very scarce or locally extinct since most respondents were unaware of their existence.

Protective Functions of Forest Resources

Despite its mountainous terrain, Mt. Data forests serve as protection of the locals from erosion. But with the loss of forest cover, the area became more prone to erosion especially when it is hit with strong typhoons. The next strike of a strong typhoon on Mt. Data can result to massive erosion and flooding downstream, with potentially severe damage (Heaney and Balite, 2006). In 2009, the Cordillera region was severely affected by Typhoons Ondoy and Pepeng. Since Mt. Data forms the headwaters of major rivers, these typhoons posed danger to many human populations. At the time of the study, the residents can still clearly remember the impact created by the said typhoons.

In terms of temperature, Mt. Data boasts of the so-called “Philippine winter.” Large portions of the area are covered with frost from the months of December to February. At present, however, there is thinning of ice. Frost is seen only in areas near water sources unlike before where it almost covers the entire highway. The thinning of ice coupled with the decrease in number of trees should have resulted to a warmer climate in Mt. Data. However, respondents claimed that it is colder today than before. Recorded temperature in Mt. Data Hotel is also lower than in recent years. These events could be early manifestations of climate change. However, further studies are still needed to validate this.

Demography

About 50 to 60 years ago, elders claimed that there were few inhabitants in the domain. As the Heald Logging Company in nearby barangay Mt. Data (aka Sawmill) expanded its operation in the early 1950s, population increased with the continuous hiring of laborers. Laborers are often migrants from nearby provinces. Alongside, commercial farming started to flourish. Over time, the IPs recognized the potential income that farming can bring. As such, they moved to La Trinidad and/or Baguio City where farm products are more profitable. Most opted to permanently settle there and returned to Sinto only during harvest time to gather their farm produce.

To date, residents near the watershed only hold tax declaration; no formal land titles are issued. Occupants are mostly migrants working in the farms since most IPs who have the tax declaration have migrated elsewhere. Tenurial arrangements for both indigenous communities and migrants can affect environmental protection initiatives. Without tenurial security, residents have fewer reasons to be effective stewards of resources.

Local Organizations, Control, and Management

The Sangguniang Barangay is a highly recognized authority by the people of Sinto. The barangay captain is important and influential in the community. Back in the old days, there was a Council of Elders but with modernization, barangay officials became the more active leaders in the community. Most political functions have been transferred to the local government. The elders can still be consulted by barangay officials on political matters affecting the community and are still regarded with high

respect.

Barangay Ordinances

There are a total of 20 barangay ordinances enacted by the Sangguniang Barangay of Sinto. From these, only four ordinances are related to watershed use and management (Table 2). However, these local policies are not necessarily aimed at watershed protection and conservation. Moreover, there are problems in terms of implementing existing ordinances and securing funds for employing forest guards. As such, domestic wastes are still dumped in the watershed. Since no forest guards are employed, monitoring is difficult. Likewise, it is easier for visitors to take samples of flora and other specimen from the area.

Table 2. Barangay ordinances related to watershed use and management

ORDINANCE NO.	PROVISION
08	Prohibiting person/s and vehicle/s to dump or dispose garbage along the road and any places especially on water sources such as rivers, drainage, canals within the vicinity of Barangay Sinto
09	Prohibiting the use of drinking water for watering garden plants in anytime of the year and prohibiting the use or preparation of chemical sprays near/around drinking community water sources
10	Prohibiting leakage of faucets that originates from the community water source
11	Prohibiting stray animals to roam in vegetable gardens, water sources, school perimeter, and barangay plaza

Agriculture

The people of Sinto highly depend on agriculture as their main source of livelihood. The weather in the area is conducive for vegetable farming. Among the top crops planted in the area are cabbage, potatoes, and carrots. According to the farm workers, cropping seasons are normally twice a year but when there is good irrigation, they can manage three or more planting seasons. This continuous cropping does not allow the soil to rest. Even more unfortunate, the more common practice in the area is inorganic farming.

The intensification of vegetable farming, with chemical inputs such as fertilizers, pesticides, fungicides and herbicides, as well as human waste, have introduced pollutants to the watershed that substantially lower the quality of drinking water for people in communities around Mt. Data and in downstream areas. The excessive use of inorganic farm inputs result to pollution and contamination of both soil and water. Another farm input frequently used is chicken dung. This could have been a better alternative; however, its strong foul odor poses possible adverse effects to human health.

At present, Sinto residents believe that farms should no longer be expanded because the watershed has already been encroached. Aside from occupying the land which should have been forest areas, farms and gardens are also competing for domestic water supply. The water supply for surrounding communities and the nearby Mt. Data Hotel comes from a series of small dams within the watershed. Continuous farm expansion along with the increasing number of watershed users contributes to insufficiency of water supply.

Mt. Data watershed is increasingly polluted by chicken dung, pesticides, fungicides, herbicides, and even human waste from field workers. Water in the dams has a layer of algae indicating eutrophic conditions brought by aforementioned pollutants. These pollutants can cause health risks to human populations downstream.

Strengthening IKSP for Sustainably Managing Mt. Data Watershed

Studying how people relate to environments such as forests means understanding how they experience these environments. In the past, the IPs in Mt. Data were able to practice sustainable use of resources. Having occupied biologically-diverse areas--their IK systems helped protect the ancestral domain and all resources therein for many years; their knowledge passed on from one generation to another.

However, with the influx of migrants, onset of economic development (i.e., building of farm-to-market roads, commercial farming), as well as tenurial arrangements and change in local controls, things started to change. The extraction of resources became unsustainable as population increased and the watershed became a “tragic common” commodity—with forests being converted into agricultural lands and vegetable farms.

Today, although there is recognition from both IPs and migrants about the watershed’s importance and the immediate need to protect and rehabilitate it, survival comes first. What matters is that people are able to provide their families with basic needs--food, water, and shelter. Social research help reveal the ways in which people are experientially and emotionally related to the environment. These experiences of natural environments contribute to the quality of people’s lives and are often, the root of many natural resource management issues. As such, there is a need to re-open the minds of both migrants and locals in Sinto and make them recall the importance of a sustainably managed Mt. Data watershed.

Over the last 50 years, changes in terms of economic activities and local controls have played a role in influencing local people’s environmental perception. The people are always the *de facto* managers of the environment. The choice to cut down trees or to shoot the birds is always their decision to make. As such, it is important that people remain educated about the importance of environmental conservation.

A dearth of information on IKSP still exists in Bauko. Most of them are just hard to come by due to poor knowledge management. The needed information cannot be accessed readily. Collective knowledge should be purposively and efficiently used to solve societal problems. Their IKSP, which adheres to the principles of sustainable development should be revived and continuously strengthened so that the once rich ecosystem may be revived.

Likewise, the coldspots approach, which is slowly gaining popularity in terms of conservation planning, can be employed to rehabilitate the watershed. Unlike the PA system which focuses on areas with exceptional biodiversity, the cold spots approach focuses on areas where there are heavily degraded ecosystems and where people thrive. It zeroes in on ecosystem services derived by the people from a certain resource. In the case of Mt. Data watershed, the coldspots approach may be used to restore the degraded ecosystem while helping the people (both indigenous and migrants) see the benefits they get from the watershed. Given that people are properly educated, they are more likely to support and participate in conservation projects.

Conclusions

Mt. Data watershed is an important resource for the Kabatangan Ancestral Domain residents--both indigenous and migrants--of Bauko, Mt. Province. However, the resource has become a “tragic common” commodity. Commercial farming is the principal cause of deforestation in the area. The whole Kabatangan forest, supposedly a forest reserve, has been converted into vegetable farms. Farmers use fertilizers and pesticides causing pollution and driving away wildlife. Agricultural diversification coupled with the development of farm-to-market roads, which aimed to improve the people’s quality of life, led to the depreciation of forest resources. Residents seemed to have forgotten the value of forest conservation and focused primarily on economic gains.

There is also a danger that IKSP would be lost due to rapid environmental, social, economic, and political changes. Over the years, the IPs have been replaced by migrants. Although there is a collective consciousness of the IKSP’s importance among the people, modernization has already set in. The residents of Bauko learned to adapt in order to become more competitive.

There is a proposal to disestablish Mt. Data National Park (MDNP) as a protected area (PA) since majority of the area have become residential. Given that the watershed is slowly losing its biodiversity, specifically its wildlife resources, disestablishing MDNP can lead to more disastrous consequences if no intervention will be done. Results of this study emphasize the great need to conserve Mt. Data and revive its goodness as remembered by the elders.

Poverty is a major issue that needs to be combated in many PAs. Since biologically diverse areas are often occupied by locals, and in the case of Mt. Data watershed, claimed as part of ancestral domain; the PA system seemingly failed to capture the public’s support.

The coldspots approach to conservation, which focuses on ecosystem services (provisioning, regulating, cultural nurturing and supporting) may be used to save the watershed from ultimate destruction. The approach prioritizes areas where there are many people and where there are heavily degraded ecosystems. As the people of Bauko see their reliance on the watershed for health and economic security, they will be more inclined to support and participate in conservation projects. In the long run, biodiversity will also be preserved but not at the expense of displacing the locals and/or migrants.

Recommendations

- There should be an adequate accounting of ecological services provided by the watershed. An economic valuation study may be conducted to assess how people value the resources provided by Mt. Data watershed.
- The Philippine PA system needs to be reviewed. The coldspots approach and community-based natural resource management are slowly being recognized as possible ways to address drawbacks in the PA system.
- KADIPO and other concerned government agencies should put their best foot forward to advocate organic agriculture and gradually retreat back to indigenous methods of agriculture. Likewise, there is a need for proper documentation of IKSP in order to ensure that it will not be lost.
- There is a need for a strong environmental education framework in order to increase people's awareness on conservation -- especially among farm workers. Such initiatives should also have continuity and reflect realities as experienced by the local.

Acknowledgement

The author sincerely expresses his gratitude to Sir Recto Alawas of the National Commission on Indigenous Peoples-CAR, Hon. Johnny Olsem and Engr. Albert Olsem of Brgy. Sinto, for their warm welcome during the field work, your help in the completion of this research was invaluable. Mr. Noel and Noriel Kidkid who served as local guides during the actual data gathering, thank you for your time and patience in translating the responses of my interviewees. We are also in big debt to Ms. Dominga Olod, Mr. Lucio Tip-ac, Mr. Marcus Cadaweng, Ms. Corazon Lartec, Ms. Bhermie Abcas and the rest of Sinto Sangguniang Barangay, Mr. Jerry Bayading, and the residents of Sitio Osok. Your insights and opinions enabled the author to weave a coherent research. To Mrs. Lorelyn Dedicataria, who took time to accompany the author during fieldworks, thank you for everything. Lastly, to PCARRD-DOST for funding this research, we hope that these findings help improve the agriculture, forestry, and natural resources (AFNR) sector of our country.

References

- Boquiren, R.D. 2003. *Indigenous Knowledge System and Development Planning*. Paper presented to the Regional Social Development Committee on May 6-7, 2003 at Baguio City. Available at <http://www.geocities.com/rowenareyesboquiren/defining.htm> Accessed 16 March 2009
- Heaney, L.R. and D.S. Balete. 2006. Final Report on a Mammal Survey of Mt. Data National Park, Mountain Province
- Indigenous Perspectives Vol. 8 No. 1. 2006. *Working on Biodiversity and Traditional Knowledge Protection*. Tebtebba Foundation, Inc. Available at <http://www.tebtebba.org/> Accessed 03 July 2009
- KADIPO Ancestral Domain Sustainable Development and Protection Plan (ADS DPP). 2009.
- Lacerna, I.D. 1997. *Community Perceptions and Knowledge for the Protection and Conservation of Cuatro Islas, Leyte*. Unpublished Master's Thesis. School of Environmental Science and Management, University of the Philippines Los Baños. 153 pp.
- Malanes, M.B. 2006. "Indigenous Peoples and Educators on Biodiversity and Traditional Knowledge." *Indigenous Perspectives Vol. 8 No. 1*: 8-33 Tebtebba Foundation, Inc. Available at <http://www.tebtebba.org/> Accessed 03 July 2009

Disaster Management in the High Risk Barangays in Albay Province, Philippines

Katherine E. Evasco

Faculty of Bicol University Sociology Department
kathy021797@yahoo.com

Bernardo R. Alejandro IV

Regional Director of the Office of Civil Defense, Region V
xandcc@yahoo.com

Abstract

This research looked into the disaster management in the 115 threatened barangays in the Province of Albay as identified by the Albay Provincial Safety and Emergency Management Office. The status of the disaster management programs of Albay Province was also assessed vis-a-vis the vision, mission and goals organizational functions, resources and linkages with other agencies. Similarly, the preparedness of the barangays in the four phases of disaster management namely: prevention, mitigation, response and recovery and rehabilitation was also analyzed. There were three sets of respondents of this study. These include the action officers of the municipal disaster coordinating councils; provincial disaster coordinating council; and the provincial safety and emergency office. Focus group discussion, survey and key informant interview were the techniques employed in data gathering.

This study was conducted with three theoretical foundations. The Talcott Parsons Structural Functionalism or AGIL scheme which considers adaptation, goal attainment, integration and latency among the phases that allows for effective implementation of activities directed towards meeting societal needs. The disaster theory with specific focus on the Crunch and Release Model explains what disaster is all about, and why this phenomenon happens, while the release model looks at how disasters can be avoided or minimized. The normative theory focuses on the comprehensive emergency management. This paper recommends that all concerned sectors in Albay Province should intensify promotion and capability-building programs about disaster management and integrate disaster management in the development programs of the local government units.

Keywords: *disaster management, mitigation, response, crunch and release model*

Introduction

One of the most disaster prone areas in the Philippines is the Bicol Region. This region covering the provinces of Catanduanes, Camarines Norte, Camarines Sur, Masbate, Sorsogon and Albay, is oftentimes the host of typhoons because of its geographical location. Specifically, the province of Albay is bounded on the east by the Pacific Ocean, on the northeast by the Lagonoy Gulf and on the west and southwest by Burias Pass. Thus, according to the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), at least 19-20 typhoons visit the province every year, of which four or five are expected to hit Albay directly (Albay Provincial Government 2006). The Bicol Region, particularly Albay Province was hit by supertyphoons Milenyo and Reming in 2006, which killed thousands of lives and tremendously damaged properties.

Disaster preparedness and rehabilitation is thus one of the concerns of the Philippine government. Hence, the National Disaster Coordinating Council was established which is responsible for 17 Regional Disaster Coordinating Councils, 79 Provincial Disaster Coordinating Councils, 113 City Disaster Coordinating Councils, 1496 Municipal Disaster Coordinating Councils and 41956 Barangay Disaster Coordinating Councils (Kelman 2008). The disaster management and rehabilitation program is integrated in the development framework in each region, including the Bicol Region. Part of the regional development challenges includes the recovery from the devastation caused by typhoons in 2006 by fast-tracking rehabilitation programs/projects in social, economic and infrastructure sectors and institutionalization of the disaster risk management initiatives and capacitating institutions at the local level to avert further losses in social, environmental and economic fields (NEDA 2008, pp.10-17).

Cabum (2001) claimed that

“disasters are largely a developmental issue. The great majority of casualties and disaster effects are suffered in developing countries. Development achievements can be wiped out by a major disaster and economic growth reversed. The promotion of disaster mitigation in the project and planning activities of development protects development achievement and assets and hence leading the population in protecting themselves against needless injuries.”

This study was conducted to address the following questions: a) what is the status of the disaster management program of Albay? b) what is the level of preparedness of Albay Province vis-a-vis the different phases of disaster management such as prevention, mitigation, response, recovery and rehabilitation? c) what are the problems encountered by the province along the different cycles of disaster management? and, d) what policies can be formulated to enhance the disaster preparedness and management in Albay province?

This study was guided by two theories—the AGIL scheme of Talcott Parsons and the Disaster Theory. The AGIL scheme of Talcott Parsons considered the four functional imperatives which allow for the complex activities to meet the needs of a system. Parsons' concept of adaptation states that a system must cope with external situational exigencies and must adapt to its environment and the environment to its needs. Meanwhile, goal attainment calls for defining and achieving its goals, and integration seeks for the regulation of the relationship among its component parts. Finally, latency/pattern maintenance states that a system must furnish, maintain and renew both the motivation of individuals and the cultural patterns that create and sustain that motivation (Ritzer 2003 pp. 231-249). This theory is relevant to this study in such a way that it looked into the measures which resulted to the need of the Province to adapt to its external environment and the ways by which such is achieved by the different disaster coordinating council levels whose functions are coordinated from the grassroots level up to the top management. Finally, to ensure the achievement of its goals, it is imperative that strategies should be in place.

The disaster theory espoused by Blaike, Davis and Wisner presents two necessary models for disaster preparedness called the Crunch and Release Model. These model states that, only when hazards meet a vulnerable situation does a disaster happen and people are vulnerable when they are unable to adequately anticipate, withstand and recover from disasters. The Crunch model explains what disaster is all about and why it happens. It also states that a number of factors influence vulnerabilities to disaster specifically the constructed/structural design, economic, natural, individual and social aspects. The Release Model on the other hand, looks at how disaster can be avoided or minimized. It states that in order to reduce the risks of disasters, the factors that cause risk must be addressed. It also emphasizes that action may be necessary at the local, national and even international level (Blaike, Davis and Wisner 2006 p.11).

Methodology

A total of 115 out of the 671 barangays in the three cities and 15 municipalities of Albay Province (e.g. Legaspi City, Tabaco City, Ligao City, Bacacay, Camalig, Daraga, Guinobatan, Jovellar, Libon, Malilipot, Malinao, Manito, Oas, Pio Duran, Polangui, Rapu-rapu, Sto. Domingo, and Tiwi) served as the representative barangays of this study. The 115 barangays, which were classified as the high risk or most threatened barangays in the province, were selected with the help of Albay Public Safety and Emergency Management Office. Table 1 shows the nature of disaster in each of the 115 barangays.

The data were gathered from the respondents using interview, focus group discussion and respondent survey. The heads of the Barangay Disaster Coordinating Council served as the survey respondents, while the action officers of the City/Municipal Disaster Coordinating Council were the participants of the focus group discussions. The Executive Officer of the Provincial Disaster Coordinating Council was the main respondent for the key informant interview.

Table 1. Nature of hazard/disaster in each of the 115 threatened barangays in Albay Province.

City/municipality	Name of barangays	Nature of hazard/disaster
1 st district		
Tiwi (4)	Baybay	Flood, storm surge, tsunami
	Balza	-same-
	Balading	-same-
	Payahan	-same-
Malinao (4)	Magapo	-same-
	San Isidro	-same-
	Hacienda	-same-
	Buang	-same-
Tabaco City (9)	Sagurong	Eruption, flood
	San Antonio	Eruption ,flood, lahar
	Mariroc	Flood, storm surge, tsunami
	Oson	Eruption, flood, lahar
	Bonot	Flood, storm surge, tsunami
	Calbayog	Flood, lahar
	San Roque	Eruption, flood, lahar
	Canaway	-same-
	Barangay 1	-same-
	Barangay 5	Eruption, flood, lahar
	Busdac San Jose	-same-
	Cagraray	-same-
Malilipot (3)	Igang	-same-
	Sogod	-same-
	Mapulang daga	-same-
	Misibis	-same-
Bacacay (9)	Sto.Misericordia	-same-
	Lidong	-same-
	San isidro	Flood, storm surge, tsunami
		-same-
	Mabinit	Eruption, flood, lahar
	Matanag	-same-
	Buyuan	-same-
	Padang	
2 nd district	Rawis	-eruption, flood, lahar
	Pigcale	-same-
	Maoyod	-same-
	Victory village north	-same-
	Victory village south	Flood, storm surge, tsunami
	Puro	-same-
	Nagotgot	Flood, erosion
	Balasbas	Flood, storm surge, tsunami
	Buyo	-same-
	Buhatan	-same-
	Poblacion	Flood, landslide
	Villahermosa	-same-
	San Ramon	-same-
	Bogtong	Flood, storm surge, tsunami
Manito (3)	Caracaran	-same-
	Alcala	-same-
	Binitayan	-same-
	Tagas	-same-
	Cullat	-same-
Rapu-rapu (6)		

Daraga (8)	Kilikao	Eruption, flood, lahar
	Malabog	Flood, lahar
	Matnog	-same-
	Salvacion	-same-
	Quirangay	-same-
	Tumpa	-same-
	Libod	Eruption, flood, lahar
	Salugan	-same-
Camalig (7)	Cabangan	-same-
	Ilawod	-same-
	Sua	Flood, lahar
	Maninila	-same-
	Masarawag	-same-
	Tandarora	-same-
	Dona tomasa	Eruption, flood, lahar
3 rd district Guinobatan (7)	Maipon	
	Muladbucad grande	-same-
	Muladbucad pequeno	-same-
	Sto. Nino	Flood, lahar
	Bautista	Eruption, flood, lahar
	Aurora	Flood, lahar
	White Deer	Eruption, flood, lahar
	Baligang	-same-
	Amtic	Flood
	Basag	-same-
Jovellar (4)	Binanowan	-same-
	Nasisi	-same-
	Nabunton	-same-
Ligao city (8)	Tambo	Eruption, flood, lahar
	Tula-tula pequeno	-same-
	Basicao Coastal	-same-
	Poblacion	-same-
	Barangay 5	-same-
	Barangay 2	-same-
	Badian	Flood
	Bagumbayan	Flood, storm surge, tsunami
	Ilaor Sur	-same-
Pioduran (4)	Ilaor Norte	-same-
	Ubaliw Rinas	-same-
Oas (7)	Rizal	Landslide
	Iraya Norte	Flood
	Alnay	-same-
	Alomon	-same-
	Basud	-same-
	Centro occidental	-same-
	Centro oriental	-same-
	Kinale	-same-
Polangui (9)	Magurang	Flood, landslide
	Ponso	Flood
	Gabon	-same-
	Burabod	-same-
	Sta.Cruz	-same-
	Talin-talin	-same-
	Bulusan	-same-

Libon (8)	East Carisac West Carisac Pantao Zone 4 San Vicente	-same- Flood, landslide Flood Flood, landslide Flood -same- -same- Flood, landslide Flood -same-

Results and Discussion

Status of the disaster management program in Albay Province

The 115 barangays of Albay Province share a common vision of implementing socially and environmentally sound disaster management program that is geared towards sustainable development. Their mission is to have a stable disaster management system that is able to protect lives and properties and minimize damages. Their goal is to ensure preparedness in terms of the physical, social, economic and cultural aspects. At the provincial level, a duly written vision is in place and ensured by the APSEMO focusing on “zero casualty and reduced risk of investments through safe and shared development.”

The respondent barangays have barangay halls, which are used as the immediate evaluation areas; tricycles which are used to transport the evacuees; and, megaphones that are used in the information dissemination. The Department of Social Welfare and Development (DSWD) is the primary government agency which provides technical assistance to the respondent-barangays in times of calamities. DSWD helped distribute the relief goods to the evacuees.

Level of preparedness in various phases of disaster management

The respondent-barangays have varying level of preparedness in the implementation of disaster management programs at various phases, namely: prevention, mitigation and response, recovery and rehabilitation. At the *Prevention Phase*, the barangays were rated to have very poor preparations along the areas of infrastructure development, such as the construction of flood control measures. These barangays, however, were moderately prepared in terms of disaster management orientation, formation of disaster response organizations, counter-disaster planning, land use regulation, emergency communication system, and public education and awareness. They were adequately prepared along disaster management training, community warning system, preparation of evacuation and emergency response training. These barangays likewise conduct drills on a regular basis.

The respondent-barangays have moderate preparations in the *Mitigation Phase*. This is indicated by the propagation of disaster resilient crops, establishment of seed bank and postharvest facilities, proper land use management, promotion of sustainable agricultural practices, implementation of safety regulation codes, control of hazardous substances, putting-up of systems to protect key installations, and infrastructure development. During the *Response Phase*, the barangays were also rated to be adequately prepared in terms of the conduct of medical missions and the relief delivery operations system. They have moderate preparations in the search and rescue operations; provision of temporary shelter; evacuation center management; psychosocial assistance, monitoring and negotiation; mobilization of less vulnerable sectors; implementation of plans; and, survey assessment.

Finally, the barangays were rated to have poor preparations during the *Recovery and Rehabilitation Phase*, particularly in rebuilding the houses, dispersal of farm and fishing tools, and the dispersal of working animals. They have moderate preparations in terms rehabilitating the irrigation system, counselling of victims, and networking or building linkages. They are adequately prepared along the areas of seed dispersal, rehabilitation of foot bridges and trails, rehabilitation of water supply system, and negotiation.

Problems and challenges in the implementation of disaster management programs

The Action Officer of the Provincial Disaster Coordinating Council identified five major problems in the implementation of the disaster management programs at the provincial level. The risk maps are either not available or needs upgrading. The culture and attitude of the communities in high risks areas also constrain their disaster management programs. Despite the awareness and relocation programs, people from these communities were still persistent to go back to their settlements. The enforcement of easement law seemed to be a failure as indicated by the presence of illegal settlers along riverbanks and coastlines which are generally classified as dangerous areas. There are also pilferages of field monitoring and warning instruments which hamper the disaster management activities.

Meanwhile, the common problems that are being encountered at the barangay-level during the *prevention phase* include the dredging of canals, lack of facilities and equipment relevant in disaster management, lack of actual community drills, and the limited knowledge of the people about the sound practices to prevent disasters. During the *mitigation phase*, among the problems include the lack of proper coordination, lack of funds to support the mitigation activities, lack of proper education, lack of cooperation during the evacuation, and the limited knowledge of people on most of the mitigation measures. During the *response phase*, the delayed distribution of relief goods; lack of basic needs of the communities; poor financial system; lack of information dissemination in times of actual disaster; and the absence of emergency vehicles are among the factors that constrained effective disaster management program. Finally, the *recovery and rehabilitation phase* is oftentimes constrained with the lack of funds; difficulty in the distribution of seeds and planting materials; delay in the transport of people and goods because of the lack of bridges in Yawa River; people

seemed not cooperative; lack of appropriate vehicles; and, the persistence of the people to stay in their settlements despite the warning of danger and disaster.

With these, the barangay and provincial governments face a number of challenges. These include the strict implementation of forced evacuation; making available relevant training programs; proper information dissemination; conduct of barangay assembly that would serve as an information and education campaign for disaster preparedness; sourcing out funds for medicines and facilities; and strict implementation of the building code.

Conclusions and Recommendations

The results of this study indicate that Albay Province has adequate preparations in disaster management, particularly during the Prevention Phase. However, the province has limited preparations during the mitigation, response and recovery and rehabilitation phases of disaster management. This is brought about by a number of problems and constraints at the provincial and barangay levels. Given the high number of high risks barangays in the Province, these constraints should be properly addressed in order to come up with a more effective and efficient disaster management programs.

On the basis the findings of this study, the following recommendations are hereby espoused:

- The National and Regional Offices of the Civil Defense to intensify their training and education programs related to disaster management to ensure that the personnel would acquire the necessary skills needed in the implementation of disaster management programs. In line with the move towards the institutionalization of the disaster management offices, the Office of Civil Defence, and the Department of National Defense should likewise employ additional personnel who shall oversee the disaster management programs at the grassroots level. In addition, these offices should propose for the upscaling of the calamity fund from 5% to a higher rate through a proposed legislation at the national level. It is further recommended that the said agencies support the bill calling for the institutionalization of the disaster management offices in the different localities so as to ensure continuous funding and proper implementation of their programs along disaster preparedness.
- The Regional Disaster Coordinating Council in Bicol to replicate the same study in other provinces to assess the capability of the region, in general, and the provinces in particular, to respond and manage disasters. This could also be a baseline data that may be a basis for further enhancement of its programs on disaster management. The office could also hold regular meetings whereby the action officers of the local government units could share their experiences and best practices so that they could learn from one another.
- For the Albay Public Safety and Emergency Management Office to consider the findings of this study as basis for enhancing their disaster management programs. Since the concern of this office is mostly on the implementation of disaster

management programs from the pre-disaster to post-disaster stages, they can very well take from the findings, conclusions and recommendations of the study that may be the basis for the enhancement of their programs. They can also work towards ensuring that transportation facilities and other relevant equipment are in place and could be accessed by the local government units.

- For the League of Municipalities and Cities in Albay to integrate disaster management as one of its agenda in its future forum or dialogues in order to share lessons and experiences from various cities and municipalities.
- The City/Municipal Disaster Coordinating Councils in Albay to be able to make use of the results of this study to assess their current state of program implementation on disaster management. The research results could serve as basis in identifying the training needs of the personnel along the areas of disaster preparedness and management. The councils should also take into consideration the disaster safety components specifically in putting up of infrastructure as this is one of the most identified areas of concern in the four phases of disaster management. These offices should also monitor the implementation of building code to check the safety of the infrastructures.
- The Department of Interior and Local Government, Albay, Provincial Office, to include disaster management and preparation as among its topics in its yearly orientation.
- The Association of Barangay Captains in Albay to share their experiences in terms of disaster management. Similarly, they should build a strong support system among themselves to ensure that necessary assistance is extended to the local communities who are in greater need.

Acknowledgment

This research is a joint undertaking of the researchers guided by a Memorandum of Agreement between Bicol University and the Regional Office of Civil Defense.

References

- Albay Provincial Government. Albay Development Master Plan (2006)
- Blaike, P, T. Canon and B. Wisner. At Risk: Natural Hazards, People's Vulnerabilities and Disasters (London: Routledge 2006) p.11
- Cabum, A.W., RJS Spencer and A. Promonis. Disaster mitigation (UK: Cambridge Agricultural Research limited 2001) p.3
- Kelman, Katherine. Institutional Arrangements and Organizational Structures. 2008

National Economic and Development Agency. Region 5 Bicol Region: Updated Regional Development Plan 2008-2010 (Bicol, Phils. NEDA 2008) pp.10-17

National Calamities and Disaster Preparedness Plan, http://www.basiclaws_mes/home_laws.html) www.unisdr.org/eng/hfa) www.Islandsproperties.com, accessed on 10-30-09

Ritzer, G. and D. Goodman. Sociological Theory 6th ed. (NY:McGrawHill Inc. 2003) p. 531

Off-Farm and On-Farm Related Problems and Coping Strategies of the Lowland Rice Farmers in Bay, Laguna, Philippines After Typhoon Ondoy

Nesslie Monsanto and Gloria Luz M. Nelson
Department of Social Sciences, CAS
University of the Philippines Los Baños

Abstract

This study describes the lowland coastal and non-coastal rice farmers in Bay, Laguna, Philippines based on their socioeconomic characteristics after typhoon Ondoy, Santi and Peping that occurred between September and October 2009. The impact of these typhoons particularly typhoon Ondoy was heavily felt by the agricultural sector. Agricultural losses from typhoons Ondoy and Peping is estimated to be 10 billion pesos. The 60 rice farmers (coastal and non-coastal) that were interviewed from Bay, Laguna showed that their harvest after typhoon Ondoy was much less than their previous harvest before the typhoon. Forty-three percent from lowland non coastal areas and only 37% percent of the lowland coastal farmers were able to harvest. After the typhoon, farmers confronted multiple problems, like flooding, delayed cropping, inadequate food and potable water supplies. To overcome these problems, farmers employed ex-ante and post-ante coping strategies. These includes abandoning farms, seeking loans from informal networks to meet household needs and formal institutions for farm inputs in the next cropping season, medical assistance and household properties and farm equipment were kept from the rising flood water. More ex-post coping strategies were employed than ex-ante procedures which make them more vulnerable to future disasters like flooding. Findings showed that children of the farmers were no longer involve in farming but were in the service type of occupation. This may be considered a threat to sustain rice farming industry in the Philippines.

Introduction

Rice is a major crop grown in the Philippines and culturally, it symbolizes wealth, luck, and good life. Farmers work long hours in the farm to preserve the social, economic, cultural and spiritual fabric of our being a Filipino. Rice is more than a food, it becomes their ultimate source of employment and the essential vessel for making a living.

Recently, climatic conditions had been shifting. We have experienced very hot summers and more intense typhoons. Flooding and other weather-related disasters had been frequently castigating humanity, especially the poor which are manifestations of a bigger problem called climate change phenomenon. The effects of climate change are manifested across countries. According to United Nations in an article entitled, “*Climate Change disaster is upon us, warns UN*”, the increased frequency and greater intensity of typhoons and disasters are manifestations of climate change. Moreover, in

another article entitled, “*Climate wars looming*”, world peace and stability is threatened because of scarcity of resources such as land, food, and water. All sectors of society are vulnerable to the effects of climate change. Agriculture is one of the most affected sector because of its dependence to nature.

The Devastation of Typhoons on Agricultural Crops

The Philippines has always been a hotspot of typhoons. On the average, 20 typhoons are hitting the country every year leaving thousands dead and millions of property wrecked. Its archipelagic feature and geography made Philippines “a natural disaster hotspot.” Three of the most devastating typhoons experienced by the Filipinos are typhoons *Ondoy*, *Pepeng*, and *Santi* which landed in the Philippines between September and October, 2009. The effects of these typhoons were readily felt by the agriculture sector. Millions of crops and livestock were destroyed and were deeply submerged with flood. Soil erosion threatened millions of lives. All these resulted to declining productivity with the threat of aggravating economic conditions of the poor.

Typhoon *Ondoy* having an international name *Ketsana*, hit the country last September 26, 2009. According to Philippine Atmospheric Geophysical and Astronomical Services Administration (PAGASA), as of October 2, 2009, 629,466 families or 3,084,997 persons were affected in Regions I, II, III, IV-A, IV-B, V, VI, IX, XII, Autonomous Region in Muslim Mindanao (ARMM), CAR (Cordillera Administrative Region) and NCR (National Capital Region: Metro Manila). The impact was also heavily felt by the agriculture sector, particularly among northern regions. After the typhoon, farms were classified “with” or “without” chance of recovery. According to the reports compiled by Manila Bulletin News Team, as of October 5, 2009, entitled “*Typhoon damage placed at Php 1.5 billion*”, the reported damages of typhoons *Ondoy* and *Pepeng* on infrastructures and agriculture reached more than Php 1.5 billion. The Department of Agriculture disclosed that, in Central Luzon alone, one of the primary producers of rice in the country, the damages incurred reached up to Php 780 million. DA Regional Director Redentor Gatus of Pampanga reported that most of the farms in these regions were classified “beyond recovery”, particularly in Aurora and Pampanga.

“*Agriculture losses from 'Ondoy', 'Pepeng' jump to P10 billion*”, that *Ondoy*’s damage was estimated at P 6.8 billion (Go, 2009; Bernardo, 2009). Because typhoon *Pepeng* hit the country several days after typhoon *Ondoy*, most of the assessments done integrated the damages of the two typhoons. According to the article, the affected area of rice farms in Regions I, II, III, IV, and the Cordillera Administrative Region (CAR) was 26,603 hectares “where 164,259 metric tons (MT) of palay worth Php 2.8 billion were lost and Php 9 million worth of investment of farmers were wasted”. Other losses involved Php 5 billion harvestable rice crops and Php 81 million on seedling/vegetative stage. Relatively smaller losses were reported in the corn sector. In Regions I, II, III, IVB and V, 7,960 hectares of corn fields were affected with 15,528 MT corn grains lost amounting to Php 207 million. A total of 20, 686 MT of vegetables, bananas, and other trees were lost among the high value commercial crops in Regions I, II, III, IVA, IVB, V, and CAR affecting 3,740 hectares.

In line with this, this study was conducted to describe the socioeconomic conditions of the lowland coastal and non-coastal rice farmers in Bay, Laguna, Philippines after typhoon *Ondoy*. Specifically, this study sought to determine differential characteristics of lowland coastal and lowland non-coastal rice farmers; determine relationship between selected characteristics of lowland coastal and lowland non-coastal farmers; find out the problems encountered by the farmers after typhoon *Ondoy*; and identify from the stories and experiences of lowland farmers common themes for coping strategies.

This paper intends to provide a picture of the socioeconomic conditions of the farmers who were affected by typhoons. The results might help the legislature create necessary policies to help farmers mitigate the unnecessary and undesirable effects of climate change. Furthermore, it will help them review existing policies, regulations and budgets related to climate change to help farmers mitigate poverty and hunger in the world.

Farmers are employing various adaptation strategies or coping mechanisms to combat the effects of climate change on their crops and their lives. Lazo, 1995 defined adaptation strategies as employment of skills and practical knowledge to meet “life’s demand and goals”. Tanzo, 1996 defined coping mechanisms as “various implementing actions and techniques undertaken by an individual or group to adapt, adjust, or manage a situation appraised as potentially harmful or stressful such as a crisis, disaster, or situations where resources are scarce”. In this study, coping strategies will be used instead of coping mechanisms or adaptation strategies. These three terms, however, are synonymous. This paper focuses on the effects of typhoon *Ondoy* on lowland coastal and non-coastal rice farms in Bay, Laguna.

Methodology

Four barangays (2 coastal, 2 non-coastal) were purposively chosen by the researcher. San Isidro and San Antonio (coastal barangays) and Maitim and Dila (non-coastal barangays) were included. This was done to identify the differences of effects of typhoon between coastal and non-coastal barangays.

One of the farmers in Barangay Puypuy served as key-informant. The unit of analysis for this study is the rice farmer. Face-to-face structured interview was used in gathering data. Data gathering was conducted from December 29, 2009 to January 21, 2010. The questionnaire was divided into three sections: socioeconomic characteristics, farm characteristics, and problems encountered and coping strategies employed. .

Results and Discussions

Socioeconomic characteristics of rice farmers

The sex distribution of lowland coastal and non-coastal rice farmers is shown in Figure 1. Seventy three percent (73%) of the rice farmers from both areas were male. Eighty two percent (82%) of the rice farmers were married. There were very few farmers who were widow/ers (12%) and fewer still were single (5%). The age distribution of the farmers (as seen in Figure 2) concentrated in the older groups namely, 51-60 (35%) and 41-50 (30%). More lowland non-coastal rice farmers were aged 41-50 while more lowland coastal rice farmers were in the 51-60 age group.

On the average, non-coastal farmers (52 years) were younger than coastal farmers (60 years). The average age of farmers from both locations was 56 years. More than eighty percent (80%) of the lowland rice farmers finished primary education. There were more high school under graduates among lowland coastal rice farmers while there were more high school graduates among lowland non-coastal rice farmers. Only two farmers has no formal education. These were older farmers who were not able to undergo formal education because of chronic poverty and repression during the Japanese occupation. On the length of residence in their present communities, fifty five percent (55%) of the lowland coastal and non-coastal rice farmers have been living in their respective barangays since birth.

Coastal farmers live in their respective community at an average of fifty years. In contrast, non-coastal farmers' length of residence is shorter (44 years) since they were relatively younger. More than half (55%) of the respondents own their residential lot while more than ninety percent (93%) own their residential house. There were also seventeen percent of them whose lot is considered part of their farm. Very few were renting their lot (7%) and living in government property (8%), particularly PNR (Philippine National Railways).

Almost 60% of the lowland coastal and non-coastal rice farmers were engaged in occupation other than farming. Majority of those who have other sources of income were small-scale businessmen like store owners (sari-sari store and others) and livestock raisers. A significant percentage (42%) considered farming as the only source of disposable income for the household.

Farm-related Characteristics

Ninety percent (90%) of the farmers went into farming because they inherited land from their deceased parents or parents-in law. Furthermore, since they were socialized in the occupation, they did not find it hard to involve themselves in the same occupation. Very few (7%) said they became farmers because there are no jobs available and because they bought a land (3%).

More than half (55%) of the rice farmers were amortizing owner. Twenty five percent (25%) of them owned their farms while 12% and 8% were tenant and certificate of land transfer holders (CLT) respectively. More lowland coastal rice farmers were owners and tenant while more lowland non-coastal rice farmers were amortizing owner and CLT holders.

Almost half of the farmers have 1.0-1.9 hectares of farm. Twenty seven percent (27%) have farms below one hectare. Most of them inherited a bigger land from their parents. The average farm size of lowland non-coastal rice farmers is bigger (1.4 has) than lowland coastal rice farmers (1.2 has). The average farm size for both locations is 1.3 hectares.

The primary sources of irrigation among farmers are National Irrigation Administration (NIA) (60%), a government owned and controlled corporation (GOCC), primarily responsible for irrigation development in the Philippines, and Calo river in Bay (33%). Eighty percent (80%) of those whose source is NIA is from non-coastal barangays. Very few farmers were using water pump (3%), most of which were destroyed and submerged during typhoon *Ondoy*.

Farming is usually done by the farmers themselves with the help of hired labor. Threshing, harvesting, and plowing using hand tractor were some of the usual farm activities done by hired laborers. Twenty five percent (25%) of the rice farmers also rely on intra household labor.

Table 1. Farm-related characteristics of lowland coastal and lowland non-coastal rice farmers in Bay, Laguna in percent

Characteristic	Lowland Coastal	Lowland non-coastal	Total
<i>Reason in becoming a farmer</i>			
Inherited from parents	86	93	90
No other jobs available	7	7	7
Bought a land	7	-	3
n	30	30	60
<i>Tenure status</i>			
Owner	33	17	25
Amortizing owner	47	63	55
Tenant	17	7	12
CLT	3	13	8
n	30	30	60
<i>Farm size</i>			
Below 1	30	23	27
1.0-1.9	53	43	48
2.0-2.9	10	20	15
3.0-3.9	-	13	7
4.0-4.9	3	-	2
5.0 and above	3	-	2
n	30	30	60
average	1.2	1.4	1.3
<i>Source of Irrigation</i>			
NIA	40	80	60
Calo river	47	20	33
Water pump	7	-	3
NIA and water pump	3	-	2
Calo river and water pump	3	-	2
n	30	30	60
<i>Source of Farm labor</i>			
Self	100	100	100
Hired	100	100	100
Intra household members	27	23	25
n	68	67	135

Majority of the farm equipment used by the rice farmers like hand tractor, thresher, sprayer, and carabao were rented or borrowed from their organizations.

Table 2. Farm equipment of lowland coastal and non-coastal rice farmers of Bay, Laguna (in percent).

Farm equipments	Lowland coastal			Lowland non-coastal			Total		
	owned	rented	borrowed	owned	rented	borrowed	owned	rented	borrowed
Hand tractor	7	73	20	10	80	13	8	52	-
Water pump	10	-	-	-	-	-	5	-	-
thresher	7	73	20	3	83	13	5	95	-
Sprayer	13	60	27	7	63	27	10	83	7
Carabao	7	13	3	7	13	-	7	13	2
N	13	84	3	8	86	2	21	146	5

Almost ninety percent (90%) of the farmers had been farming for more than 10 years. As regards to farming experience, the greatest concentration was in the 11-20 years (23%) followed closely by 21-30 years (22%). On the average, the number of years spent in farming is higher among lowland non-coastal rice farmers (29 years) than lowland coastal rice farmers (28 years).

Since agriculture is not a guarantee for stable source of livelihood, it is important to have some forms of security. One of these is joining farmers' organizations, particularly cooperatives, which can provide farmers with assistance in times of financial shortcomings either in monetary or physical forms, such as entitlement to some of the organization's farm equipment. Seeing the benefits of being affiliated, sixty five percent (65%) of the respondents were members of farmer's organizations. Seventy percent (70%) of them belong to the non-coastal barangays of Maitim and Dila. The barangay with the lowest number of affiliated farmers is San Isidro (non-coastal barangay). This could be explained by the absence of cooperatives in the barangay as disclosed by one of the farmers. Among the sixty affiliated farmers, only eighteen percent (18%) occupies leadership position. Although, majority of the members of the organization are from non-coastal barangays, sixty percent (60%) of them are non-leaders.

Those who did not join any organization chose not to because of various reasons like small farm, lack of recommendation, and lack of commitment. Thirty two percent (32%) of non-members did not join because other relatives were already members while twenty seven percent (27%) said they will not get anything from these organizations. This is reflective of the fact that the main reason why farmers join organization was the benefit they can derived from the membership. Thus, if someone in the family, even extra-household members, who own separate farms, were already members, farmers decide not to be involved since the information in the meeting can be relayed to them by other farmer relatives.

Farm-related Economic Characteristics Before and After Typhoon Ondoy

All the farmers were able to harvest from the previous cropping season before typhoon *Ondoy*. However, only forty percent (40%) were able to harvest after typhoon *Ondoy*. Forty three percent (43%) of them were non-coastal farmers while only thirty seven percent (37%) were coastal farmers. This is not to mention the number of sacks of rice they were able to save. Some have saved very few sacks of rice (e.g. 5 sacks of rice).

Before typhoon *Ondoy*, thirty three percent (33%) were able to harvest 51-100 sacks of rice followed by 101-150 sacks (23%), and 50 sacks of rice and below (17%). Few harvested 301-350 sacks of rice (3%) and 251-300 sacks of rice (2%). The average number of sacks harvested by lowland non-coastal rice farmers before typhoon *Ondoy* is higher (121 sacks) than lowland coastal rice farmers (119 sacks). This is because the farm size of lowland non-coastal rice farmers is bigger than lowland coastal rice farmers.

After typhoon *Ondoy*, the average number of sacks of rice harvested by lowland non-coastal rice farmers remain higher (24 sacks) after typhoon *Ondoy* than lowland coastal rice farmers (15 sacks). This is because more farmers were able to harvest from non-coastal barangays. However, the harvested grains were not in good quality. The income of the farmers before typhoon *Ondoy* was between Php 5001-10,000 and Php 10,001-15,000. There were very few who were able to earn Php 40,001 and above (8%), Php 35,001-40, 000 (8%), and Php 30,001-35,000 (2%). The average income of lowland coastal rice farmers is higher (Php 21, 567) than lowland non- coastal rice farmers (Php 17, 817).

After typhoon *Ondoy*, 58% of the farmers have negative income. These are the farmers who were not able to harvest. From those who were able to harvest, eight percent has break-even income and another 8% were able to earn Php5,000 and below. The average income of lowland coastal rice farmers is lower (Php 2, 267) than lowland non-coastal rice farmers (Php 2, 400) because more non-coastal rice farmers were able to harvest after typhoon *Ondoy*.

Table 3. Physical and Socioeconomic Characteristics of lowland coastal and lowland non-coastal rice farmers in Bay, Laguna before and after typhoon *Ondo* (in percent).

Characteristic	Lowland coastal		Lowland non-coastal		Total	
	pre	post	pre	post	pre	post
Number of Times harvested						
Once	-	63	-	57	-	60
Twice	100	37	100	43	100	40
n	30	30	30	30	60	60
Number of sacks harvested						
50 below	13	24	20	20	17	22
51-100	33	13	33	20	33	17
101-150	23	-	23	-	23	-
151-200	20	-	3	3	12	2
201-250	3	-	10	-	7	-
251-300	-	-	3	-	2	-
301-350	3	-	3	-	3	-
351 and above	3	-	3	-	3	-
Did not harvest	-	63	-	57	-	60
n	30	30	30	30	60	60
average	119	15	121	24	120	19
Price of rice per kilo						
Below 5	-	3	-	3	-	3
6 to 10	3	17	3	27	3	23
11 to 15	97	7	97	3	97	7
Did not harvest	-	63	-	57	-	58
Did not sell harvest	-	13	-	10	-	8
n	30	30	30	30	60	60
average	13	3	13	3	13	3
Income						
5,000 below	10	-	13	13	12	7
5,001-10,000	17	3	20	3	18	3
10,001-15,000	13	7	20	7	17	7
15,001-20,000	20	-	10	-	15	-
20,001-25,000	3	-	7	-	5	-
25,001-30,000	10	-	3	-	7	-
30,001-35,000	3	-	-	-	2	-
35,001-40,000	13	-	3	-	8	-
40,001 above	10	-	7	-	8	-
Negative (did not harvest)	-	63	17	57	8	60
Negative (did not sell harvests)	-	13	-	10	-	12
Break even	-	13	-	10	-	12
n	30	30	30	30	60	60
average	P 21, 567	P 2, 267	P 17, 817	P 2, 400	P 19, 692	P 2, 367

More than three fourths of the farmers spent more than ten thousand pesos (Php 10,000) in the previous cropping season before typhoon *Ondoy*. The biggest capital was concentrated on the highest range of Php 51,000 above. On the average, the capital spent on the crops destroyed during typhoon *Ondoy* was higher among lowland coastal rice farmers (Php37,100) than lowland non-coastal rice farmers (Php 30,517). The average expenses spent by rice farmers was Php 33, 808.

Seventy seven percent (77%) of the farmers borrowed their capital for the crops destroyed. More than half of the rice farmers borrowed from formal social networks like banks, rice and fertilizer dealers, and farmers' organization. Rice dealers were accessible and willing to lend capital since it is expected to be returned once the farmers harvested. Most of the time, since they are also the buyers of the harvested crops, they just deduct the debts from the payment.

Only twenty eight percent (28%) of the farmers owned their capital before typhoon *Ondoy*. Included in this category are manager's capital.

Rice farmers least preferred informal social networks (17%) which involves relatives and friends. Instead of providing capital for farm requirements, informal social networks are more often tapped to meet consumptive needs like food because the capital required in farming is big.

Table 4. Expenses and sources of capital of lowland coastal and lowland non-coastal rice farmers in Bay, Laguna on the crops destroyed by typhoon *Ondoy* (in percent)

Characteristic	Lowland coastal	Lowland non-coastal	Total
<i>Expenses in the crops destroyed</i>			
Below 5,000	7	7	7
5001-10,000	17	20	18
10,001-15,000	20	3	12
15,001-20,000	7	20	13
20,001-25,000	7	20	13
25,001-30,000	10	3	7
30,001-35,000	3	-	2
35,001-40,000	3	3	3
40,001-45,000	-	3	2
45,001-50,000	3	3	3
50,001 above	23	17	20
n	30	30	60
average	P 37, 100	P 30, 517	P 33, 808
<i>Source of capital for the crops destroyed</i>			
owned	30	26	28
Formal social networks	50	57	53
Informal social networks	17	17	17
Formal and informal	3	-	2
n	30	30	60

Farm and other livelihood problems

All the farms were inundated with flood as high as three to five feet. The period of flooding varies from farm to farm and its proximity to the lake is not a factor. Submerged farms resulted to delayed farming, which ranked second among the farm problems encountered. Because farmers waited until water in their farms completely receded, the cropping season of some of the farmers was postponed from December to early or mid-January. Farmers who had experienced shorter period of flooding had to wait for other farmers before they could plant because farms which were planted earlier will be affected by pests and birds. The biggest problem faced by farmers was the lost opportunity to harvest. There were more farmers from coastal areas who were not able to harvest, the reason was the crops were not due to be harvested when typhoon *Ondoy* occurred. Those who were able to harvest reaped lesser and poorer quality of crops. Some of their crops were already under water when harvested. Grains which were already submerged were considered substandard and, thus, lack the potential to be bought in a higher price. This accounted for the reduced income of the farmers. More than half of the farmers also experienced problems on water lily. The degree of problem was relative to the location of the farm. Those whose farm was at the middle received little or no problem, because water lilies were carried away towards farms at the end. Other farmers who were severely affected by water lilies needed to spend money to solve their problem. Because of the severity of the problem on water lilies, the municipality created an activity which transformed water lilies into useful products, such as bags. Other farmers, mostly middle-aged and old women participated in the said activity. Other problems were golden snail and garbage among others. Some farmers encountered problems on irrigation either because their water pumps were submerged or the river was clogged.

On farm and livelihood problems, all coping strategies employed by the farmers were post-ante strategies. Deeply saddened by the typhoon, all farmers just abandoned their farms to wait until water completely receded. All of them also manually cleaned their farms when flood went down. Since most of the farmers did not harvest, the municipality provided them with free seedlings. However, only 78% of them were given seedlings. According to some farmers, the number of sacks of seedlings provided was relative to the size of the farm of the farmers. Operators of one-hectare farms were given one sack; two hectare farm received two sacks. Others who did not receive bought or borrowed seedlings from the municipality or from other farmers who were able to harvest. Those whose water pump were submerged from flood were forced to use irrigation water from NIA in the next cropping season. Clogged water sources were fixed by farmers through *bayanihan*.

Financial problems and coping strategies

Because majority of the farmers only borrowed their capital from the previous season, most of them were not able to pay back their loans because of lost income, after their crops that was about to be harvested had been destroyed by typhoon Ondoy.

Majority of the coping strategies employed by the rice farmers in their financial problems were ex post. The only ex ante strategies were off-farm occupations that provided them income during typhoon *Ondoy*. The foremost ex post strategies employed, regardless of farm locations, were income diversification (63%), loaning (58%) and economizing (57%). Fishing and boating were among the occupations found by the residents because of the flood. Lost income also forced the rice farmers to borrow money to meet consumptive and farm needs. They also tightened their belts and reduced household expenditures by switching to cheaper food like vegetables and fish and utilizing the relief goods given.

The relatives of the rice farmers provided financial support and provisions like food which helped reduce household expenses. Other ex-post strategies utilized were sales of farm equipment/animals, savings and/or pension and honorarium, and consumption of planted vegetables and relief goods. Other farmers did not hire farm labor for the next cropping season, did not loan to avoid accruing interests, gave up parcel of land, sold harvest from previous cropping season, and attended seminars and activities.

Water problems and coping strategies

More than half of the farmers did not have problems with drinking water after typhoon *Ondoy*. Forty percent (40%), however, had unclean and unsafe drinking water. This is higher among non-coastal farmers.

Food problems and coping strategies

Almost all (97%) of the rice farmers did not experience food problems because of the availability of alternatives. Sixty three percent (63%) employed various coping strategies; majority of which are ex post. Almost sixty percent (60%) of the rice farmers received relief goods. Those who stayed in the evacuation sites for several months continuously received free food. Other farmers who decided to stay at home were also provided by relief goods. Instead of buying food, the households consume the goods given to reduce expenditures.

Other ex-post strategies employed by the rice farmers were economizing, evacuating, and diversifying income. The assistance received from intra and extra household members were also useful.

Housing problems and coping strategies

The problems of the farmers were not confined in the farm. Farmers had to face the effects of the typhoon in their own households. The losses and damages ranged from submerged appliances like television, refrigerator, etc. to damaged doors, windows, roof, and ceilings. Even worst, the house of one of the non-coastal farmers was burned when his daughter who refused to evacuate forgot the lit candle.

Farmers from Bay, Laguna employed multiple coping strategies to solve their housing problems. Majority of these coping strategies were ex post. Since their house was flooded with mud and water, manual cleaning of the house was necessary which accounted for eighty percent (80%) of the coping strategies employed. There were more farmers who manually cleaned their homes from lowland coastal barangays since more damages were incurred from those areas. Also, since houses were submerged, majority of the farmers' households needed to evacuate (55%). More evacuees were also households of coastal farmers. The decision to evacuate is done by the head/s of the households. Another decisive entity was the local government officials who persuaded some of the affected households to evacuate.

There were also some ex ante strategies employed. These include securing and nailing roof, preparing things for emergency such as food, clothes, and flashlight, gathering children, and transferring harvests to higher place.

Health-problems and coping strategies

More than half of the farmers did not encounter health problems after typhoon *Ondoy*. Only less serious illnesses such as fever, colds, and cough were experienced. Few also suffered from skin problems brought about by flood, particularly leptospirosis and psychological problems, such as anxiety, brought about by lost income.

For the coping strategies on health problems experienced during the typhoon, sixty two percent (62%) had no coping strategies. Minor illnesses were the most common, thus, they were not taken very seriously. However, for serious illnesses like stroke, the farmers sought medical assistance (15%). Apparently, all coping strategies employed by the farmers were ex post.

Psychological problems and coping strategies

The effects of the typhoon were not only limited on physical and financial forms. It also resulted to some psychological problems among farmers. The highest reported (37%) was anxiety. Hopelessness and constant fear were also high with 25 and 22 percent respectively. These feelings were results of the lost opportunity to harvest. Anxiety is higher among coastal farmers because of the problems created by typhoon. Sixty two percent (62%) of the farmers said their faith in God prevented them from losing hope after the disaster. However, there were also thirty two percent (32%) who did not employ any coping strategies on their psychological problems. Other coping strategies employed by the farmers were categorized as ex ante and ex post. Among ex-

ante strategies were securing roof and elevating harvest and other household properties. Seeking moral support from relatives and friends, drinking with friends, and working were among the ex-post strategies of the farmers.

Conclusion

The results of the survey revealed that seventy five percent (75%) of the farmers borrowed the capital they used on the crops destroyed by the typhoon. Because the relatives of the farmers were also poor, rice farmers cannot rely on them during crisis for financial support. In both the survey and the case studies, it was seen that other than seedlings, relief goods were the biggest help provided by government and other organizations to the rice farmers. The provision of these goods helped reduce household expenses since farmers consume them instead of buying food. Rice farmers in Bay, Laguna encountered on-farm and off-farm related problems. The foremost on farm problems faced were flood, delayed cropping season, and lost opportunity to harvest. Other problems encountered were poor quality of harvested crops, water lily, garbage, *kangkong*, golden snail, irrigation problems like clogged water source and destroyed water pump, etc. The coping strategies employed on farm problems were post ante. These include farm abandonment, manual cleaning, utilization of free seedlings, fixing clogged water source, tapping other irrigation sources, and purchase of seedlings.

Rice farmers in the country are continuously burdened by the effects of typhoons in their yields. The study describes the socioeconomic characteristics and their problems after typhoon *Ondoy* that occurred in September 2009 which devastated lowland rice farms in Bay, Laguna. To overcome the aftermath of the typhoons and look forward to a new beginning, various coping strategies have been utilized for survival and for mitigation of the effects of flooding after typhoon *Ondoy*. Farming does not provide lucrative income. In most cases, the income earned is for payment of debts incurred from the previous cropping season. Most of the large capital required in farming are loans from formal and informal social organization networks such as bank, government institutions, friends, relatives, and dealers of rice and fertilizers. Farmers prefer formal networks because it provides bigger loans. Rarely can we find farmers without debts. After typhoon *Ondoy*, their debts doubled and yet it is very disheartening to know that the National Food Authority (NFA) had hoarded several thousands of cavans of rice only to have been found rotten and infested with bugs.

Bibliography

- Aljama, Cesar G. 2000 Kasaysayan ng Bay Chapter 2 History and Legends: Comprehensive Land Use Plan of the Municipality of Bay, Laguna 2000-2010
- Behura, S. P.; Villano, R. ; and D. Naik
- 2001 Drought risks, farmers' coping mechanisms, and poverty: a study of the rainfed rice system in eastern India: main book Rice Research for Food Security and Poverty Alleviation edited by S. Peng and B. Hardy 2001 IRRI publication Google earth Map of Bay, Laguna. Retrieved on March 22, 2010.
- International Strategy for Risk Reduction September 2008 Climate Change and Disaster Risk Reduction. United Nations Framework Convention on Climate Change (UNFCCC). Geneva. Retrieved on February 10, 2010 from http://www.preventionweb.net/files/4146_ClimateChangeDRR.pdf
- Lansigan, Felino P. Climate Change and Rice Production. In Coping with Climate variability and change in rice production systems in the Philippines. Retrieved on November 9, 2010.
- Lazo, Judy Ann L. 1995 Socio-economic Correlates of Farmers' Coping Mechanisms in Times of Drought in Barangay Palloc, Ballesteros, Cagayan: University of the Philippines Los Banos (unpublished undergraduate thesis).
- LexisNexis Publication October 8, 2009. DA working on bigger typhoon aid packages. Retrieved on November 9, 2009 from <http://www.allbusiness.com/safety-accidents-disasters/disasters/tropical/13174146-1.html>
- Manila Bulletin New Team October 5, 2009. Typhoon damage placed at P1.5 billion. Retrieved on February 5, 2010 from <http://www.mb.com.ph/articles/223299/dam...>
- Oroy, Nerley Joy C. 2009 Volunteerism in a Farming Community: The UPLB Pahinungod Appraoch: (manuscript)
- Pandey S.; Bhandari H.; and B. Hardy 2007 Economic costs of drought and rice farmers' coping mechanisms: a cross country comparative analysis. Los Baños (Philippines): International Rice Research Institute.
- Paris, Thelma 2003 Activities Contributing to Livelihoods in Eastern Rice-Wheat Tracts. An Article in Addressing Resouce Conservation ISSUES in Rice Wheat Systems of South Asia: Rice-Wheat Consortium for the Indo-Gangetic Plains International Maize and wheat improvement Center (RWC-CIMMYT). India.
- Rosales, Emily P. 1987 On-farm and Off-farm Occupational Activities of Landless Women: University of the Philippines Los Banos (unpublished undergraduate thesis).
- Sawada, Y.; Estudillo, J.P.; Fuwa, N.; and K. Kajisa 2009 How Do People Cope with a Natural Disaster? The Case of Super Typhoon *Milenyo* in the Philippines: College of Economics and Management University of the Philippines

- Science Daily, March 28, 2006. Sequencing The Rice Genome Could Help Mitigate Impact Of Climate Change On World's Poor. Retrieved on November 9, 2009 from <http://www.sciencedaily.com/releases/2009/10/091016094049.htm> October 19, 2009. Climate Change Threatens Rice Production. Retrieved from <http://www.sciencedaily.com/releases/2009/10/091016094049.htm> Science Newson November 10, 2009
- Southeast Asia Regional Institute for Community Education 2001Community Biodiversity Development and Conservation Programme-Bohol Project. The Socio-Economic Survey in Rice Farming of CBDC Bohol Project in the Philippines. Technical Report No. 13: Quezon City, Philippines
- Tanzo, Irene R. 1996 Coping Mechanisms and Social Networks of Mt. Pinatubo Affected Rice Households in Pampanga: University of the Philippines Los Banos (master thesis).
- Tawang, A. B., and T. A. Ahmad 2003 Stabilization of Upland Agriculture under El Nino-induced Climatic Risks: Regional and Farm Level Risk management and Coping Mechanisms in the Kedah-Perlis Region, Malaysia: CGPRT Center Working Paper No. 7, Indonesia. 203 p.

The ‘Salad Bowl’ in Transition: Agriculture and Its Ecological Environment

Karen A. Calderon

Graduate Student

MA Sociology-University of the Philippines, Diliman

karcalderson78915@gmail.com

Abstract

This paper problematizes the changing relationship between the system of agricultural production and its ecological environment. Particularly focusing on the dynamics of agricultural life in the town of La Trinidad, Benguet in the Philippines, which promotes itself as the country’s “salad bowl,” this research is informed by Niklas Luhmann’s social system theory and primarily argues that there is no point-for-point communication between the system of agriculture and its environment. For this reason, agriculture can only communicate about and not with its environment. It is only when agriculture perceives ecological dilemmas as threats to its operation that it begins to rethink its relationship to nature and attempts to change its modus operandi to address such dilemmas. Thus, ecological disasters can only produce “too little resonance” within the system of agricultural production. But once ecological problems become visible to agriculture and are consequently translated into its communicative processes, thereby triggering agriculture’s self-critique and self-transformation, they are bound to create disturbing conflicts within the system itself. When this happens, ecological problems produce “too much resonance” within agriculture. In this paper, I argue that there is enough evidence to show that La Trinidad’s agriculture is changing. The salad bowl phenomenon that drew huge sums of money to the town’s coffers has begun to reevaluate its commercialized practices. The town’s agriculture is changing, albeit only slowly, and as a result, social fissures have begun to divide its practitioners and stakeholders. This is what I explored in this research which uses a constructivist approach. To accomplish this research, I have conducted a field work, aided by second-order participant observation and a series of formal and informal interviews.

Introduction

This paper is a product of troubled times. I began writing it in Baguio City, Philippines sometime in February. Barely four months after the city’s hillsides and highways collapsed to the raving rains of supertyphoon Pepeng, Baguio seemed to have rebounded from the typhoon’s calamitous wrath. It quickly got itself ready for its annual festival of blooming flowers, drawing huge sums of tourist money to the coffers of the city. This kind of festival economics comes with a quid pro quo: Tourism piles up garbage on sidewalks. Tourist cars and buses blanket the cold atmosphere with noxious fumes of burned petroleum. Yet whether the surge of pollution is acceptably commensurate to the flood of money that flows into the city is a question which does not seem to resonate among the city’s social circles. Sometimes, people lament the now observable ecological costs of sustaining the city’s continuing urbanization, but they produce only a negligible noise that’s incapable of seriously undermining the status quo of the city’s tourism economics and metropolis-like production (and anti-production).

The same observations extend to Benguet's capital town adjacent to Baguio, as though urbanization and the ecological strains that come with it have no respect for boundaries. La Trinidad, the capital town of Benguet Province in the Cordillera Administrative Region (CAR) in the Philippines, has changed so rapidly over the years. What used to be a valley of pine trees is now a basin of buildings and buildings-to-be. Fogs used to descend to its farms and jacket its pine trees. Now, its atmosphere smells of dust and smoke. And while the solitary road that connects it to Baguio City has widened, it has also narrowed. Thanks to the multiplying cars of the nouveau riche Ibalois and Kankanaeys, the huge trucks that transport vegetables from Benguet to the lowlands, those that deliver manufactured goods from the factory-infested metropolis and suburbs to the mountainous provinces of the Cordillera, and the jeepneys and buses that make rapid mobility possible for the burgeoning Cordillera population.

If there is one thing that somehow managed to become change-proof in this locality, it is that it still remains primarily dependent on agriculture, notwithstanding the degree of urbanization that it has obviously been going through. But even its agricultural production has transformed. The changes that mark its progression through time are difficult; they are bound to generate social crevices. This is precisely what this paper is all about.

This study is inspired by the cataclysm brought about by two historical typhoons, Ondoy and Pepeng, that hit Metro Manila and Northern Luzon, respectively. The typhoons were devastating enough to have rattled our already crises-laden society. Their environmental implications and the threats they pose to our future are too unnervingly urgent for sociology to simply gloss over. When I was conceptualizing this study, I had in mind the observation that the anxiety that enveloped society during Ondoy and Pepeng receded along with the killer floods and landslides. As if assured that calamities of such enormity will not happen again, people immediately headed to a kind of back-to-normal rebuilding. I was curious to understand why, despite the sheer violence with which Ondoy and Pepeng shook our lives, they seemed to be ordinary and forgettable. They seemed to be too insignificant to prompt us to rethink our ways of life and change them in response to the now growing call for an ecologically responsible lifestyle.

I chose to locate my problematization in the sphere of society's agricultural production because I figured that the devastation of the farming societies of Northern Luzon when Pepeng came in October 2009 is an overwhelming blow to agriculture. My study, which owes its (semi-)completion to the agricultural life of Benguet's capital town La Trinidad, revolves around a curious question: Why does a life-threatening ecological calamity like Pepeng resonate only too little (but also too much) within society, particularly within its agricultural sphere? Pepeng's heavy rains submerged and destroyed La Trinidad's vegetable and strawberry farms. But whether Pepeng (or a similar ecological calamity) effects significant structural changes on agriculture remains a question. Up to what extent, if indeed it does, does agriculture react to ecological calamities such as Pepeng? How much structural change can it accommodate as a response to the demand for ecological responsibility? Or, perhaps, the first question to be asked is whether agriculture perceives ecological threats as threats and whether it can afford to problematize them, given that its engagement in the cultivation of land cannot but depend on the (over) use of natural resources, thereby straining the ecological

domain of its environment (See for example Deb and Joshi 1994). For while it is likely that an environmental cataclysm as shockingly violent as Pepeng—indeed violent enough to have caused colossal landslides that buried hundreds of helpless people alive—is capable of disturbing the everyday lives of people and forcing them to rethink their relationship to nature, it is also equally possible that Pepeng is regarded only as a short interruption in the ever-fleeting everydayness of community life, too ordinary to be intensely remembered, too common that it is so easy to bury into the human faculty of forgetfulness, too unexceptional that it can only produce “too little resonance,” as the sociologist Niklas Luhmann put it, within the communicative system of society.

The problem I dealt within this research is not just a simple remembering/forgetting disjunction. I do not intend to simply assess whether agriculturists find themselves guilty of damaging nature. Neither do I aim to argue for “environmental ethics” that subordinates “classical, market-based economics” to “sustainable economics” (Des Jardins 2001, pp. 60-62). That would be an objectivist presupposition of agriculture’s direct (ir) responsibility in dealing with its environment, an argument I am cautiously guarding myself from. Instead, I seek to understand why agriculture cannot easily change its productive methods despite perceiving them as ecologically problematic. I would argue, nonetheless, that to a fairly significant extent, La Trinidad’s agricultural system has begun to communicate about its relationship to its ecological milieu, and the resonance of an ecological discourse within it is attributable to a conglomeration of different problems, both environmental and otherwise, that it has so far experienced. As a result, it has begun to change.

In what follows, I attempt to describe the change in the social interaction within the agricultural system of La Trinidad, Benguet. The fluidity of the town’s agriculture as manifested by its attempt at converting from conventional to organic farming, a project initiated by the local government of La Trinidad and supplemented by Benguet State University (BSU), is by no means smooth. It entails a painful dismantling of conventions and is, consequently, bound to create social fissures, which, albeit remaining dormant and non-violent, are potentially disruptive.

Theoretical Orientation and Research Methodology

- ***Ecological Discourse in Social System Theory*** In Niklas Luhmann’s social system theory, society can never have a direct communication with its environment (1989, p.11). Society is composed of autonomous and self-referential function systems whose respective codes of communication can only communicate *about*, and not *with*, the environment. I take this as the fundamental meaning of what Barry (2010, p. 116) calls the “environment/society disconnect”. In Luhmann’s analysis, the environment of a social system is always more complex than the system itself. It is the task of a social system to manage the complexity of its environment. Thus, the system is forced to select some information from its information-overloaded environment, and such selection depends on its own structures and internal communicative operations. The system’s autonomy means that although its environment constantly disturbs it, it alone—not its environment—determines how it reacts to disturbances. It chooses whether or not it will heed its environment’s noises. It selects which disturbances it will pay attention and react to. And so, even

if all marine life suddenly becomes extinct, society may not communicate about it, in which case it does not become an ecological problem. It makes sense, then, to suggest that if attempts to address the much talked-about ecological threats of the present troubled times rush to failure, that is because there is no point-for-point correspondence between society and its ecology. Ecological crises exist only when society communicates about them. The question is when and in what instances does it begin to recognize ecological problems as problems and begin changing its operations in an attempt to address them.

In her book *Timescapes of Modernity: the Environment and Invisible Hazards*, Barbara Adam argues that time is the “invisible ‘other’” of civilization (1998, pp. 9-10). That is precisely what makes environmental hazards inconspicuous to the human senses constantly socialized to perceive only space. Ecological crises deal with phenomena in which actions are altering the environment “below the surface,” that is, in ways that are hidden to human perception, over a long stretch of time. Actions remain invisible until such time we begin to feel their symptoms, in the course of which it is no longer easy to pinpoint causes with absolute certainty. Nuclear radiation, for example, is imperceptible; it does not occupy a tangible space. But it works through time, subtly facilitating the mutation of the biological composition of humans and non-human species. Its life cycle expands to centuries and therefore its measurement is beyond human capacity. But as soon as its symptoms begin to wreak havoc on communities, society explodes to an environmental catastrophe.

Ecological disasters become problematic when they cease to be invisible, that is, following Adam’s argument, when the temporality of nature becomes perceptible, or, in Luhmannian semantics, becomes *communicable*. When symptoms begin to appear, when they begin to shake the ground on which society and its beliefs are founded, as when extraordinarily strong typhoons take lives and ruin properties or when toxic chemical waste deposits start unleashing fatal diseases, society begins rethinking its relationship to its ecological environment. I suppose this is because a jarring ecological disturbance causes too much perturbation for society not to seriously talk about it.

- **Research Strategy and Data Gathering Methods** This study was carried out through fieldwork. For two months, I conducted intermittent visits to La Trinidad’s farms and market. I complemented my fieldwork with participant observation and formal and informal interviews with conventional vegetable farmers and vendors and organic farming practitioners. I also had interviews with the Municipal Agriculture Office and with an Agriculture professor at Benguet State University (BSU).

Bearing in mind the epistemological implication of theorizing society as composed of self-referential function systems that define themselves in relation to their environment—namely, that social systems observe and construct their own realities in the process of observing—I am compelled to say that this research is itself a product of observation and is therefore the outcome of my own construction of La Trinidad’s agricultural life. Even the very problems from which this study proceeds, the data gathered in the process, and the analysis that attempts to make these data meaningful, are all products of my own observation.

The Evolution of the ‘Salad Bowl’ Phenomenon

La Trinidad’s economy remains primarily dependent on its agricultural sector. There are many evidences that point to the primacy of agriculture in La Trinidad since historical accounts can reveal. Most of the farmers I brushed elbows with during my fieldwork have been farming since they were old enough to learn the fundamentals of cultivation. They come from families of farmers. There is a continuing tradition of farming in La Trinidad. Apparently, the agricultural production that characterizes the town is not unique to the present. It existed in the past, and owing to the self-reproduction of agriculture and its indispensability as an economic sector, we may reasonably say that it will continue to operate in the future, perhaps perpetually.

What appears extraordinary in the present agricultural dynamics of the town is the magnitude of its vegetable production. But it’s not only the quantity of vegetable production that changed over the years. In the pre-Spanish era, La Trinidad’s arable lands were planted with rice, indigenous root crops, and sugar cane.¹ These crops were expelled from the fields by what are now called high-value commercial crops like potatoes, carrots, cabbages, broccolis, lettuces, strawberries, etc., which were introduced to the town by the American colonizers in the early 1900s. This development was in many ways aided by the establishment in 1910 of an agricultural school now known as the BSU which experimented on the potential of growing foreign crops in the locality. In 1920, President Manuel Quezon granted the University land reservations, allowing it to develop agricultural technologies that made possible the mass production of high-value crops in La Trinidad and in the rest of Benguet.

But what conditions necessitated the mass production of high-value crops in La Trinidad? The Officer-in-Charge of the Municipal Agriculture Office (MAO), in an interview, traced the commercial transformation of La Trinidad’s agriculture to the booming of commercial farming in the 1950s and 1960s. It was precipitated by the growing demand for vegetables coming primarily from the National Capital Region. Traditional farming was no longer sufficient to meet the demands of the growing market. Not only did the area of vegetable production expand tremendously. The MAO Officer said that agriculture also shifted from the use of indigenous methods of gardening to the application of modern farming technologies that guaranteed huge volumes of outputs. This process of agricultural modernization in La Trinidad is something its practitioners would later on begin to rethink and attempt to alter.

For having massively produced vegetables since the post-World War II decades, La Trinidad became known in the 1970s as the “Salad Bowl of the Philippines”. This reputation, which its local government actively promoted, married tourism and economics. The influx of tourists to the municipality intensified in the 1990s when La Trinidad was named the “Strawberry Fields of the Philippines”.

It must be said that this transformation was not only prompted by the need to respond to the country’s growing demand for agricultural products or by BSU’s scholarly exploration of agricultural technologies applied to the community’s real farming practice. To unearth the origin of a social phenomenon as multifaceted as La

Trinidad's commercial farming involves ramifying the synthesis of events that led to this salad bowl phenomenon—and there must be a lot of them. I should mention that among these is the problematization of non-modern methods of farming as manifested by the Highland Agricultural Research Center of the Mountain State Agricultural College now known as BSU. One of its researches argued that “the highlands have not yet been made responsive to modern and advanced technology,” hence the “lag in the expansion of production and the failure to achieve measurable income increases” (Dar, n.d.²). Following its agricultural problem assessment, the research recommended that “superior seeds, fertilizers and modern agricultural equipment should be made available”.

It should also be said that the modernization of La Trinidad's agriculture could not have been possible sans the global economic integration that began to intensify in the postwar years. Lewis (1992) describes how radically Benguet's agriculture changed when the province was integrated to the global economic order. He firmly connects the burgeoning of commercial crop production as well as the adverse ecological consequences that came with it to this economic integration. He further details that “the Benguet vegetable farmers became entangled in the world economy not primarily as producers for a global market, but rather as consumers of agricultural supplies produced in the metropolitan states” (p. 143). The Municipal Agriculture Office itself notes, quite in agreement with Lewis' ethnographic construction, that synthetic fertilizers and chemical biocides, inputs that have become necessary for mass vegetable production, are imported from multinational suppliers overseas. BSU was once the agrochemical testing site in Benguet. The university had been a partner of agrochemical companies both in experimenting on the effectiveness of these agrochemicals and in introducing them to La Trinidad's farms. This is according to a professor of Agriculture at BSU. It could, thus, be maintained that mass agricultural production has become coexistent with industrial production in the present economic landscape of the globe, as when the “world farm” emerged to supply the world's growing consumer population with agricultural products (McMichael 2008, 106-110), and therefore, the shift in the mode of agricultural production in La Trinidad is just the local offshoot of a global phenomenon. The problematization of non-modern agriculture itself was a consequence of the global economic re-appropriation of Benguet agriculture.

When Agriculture Undergoes Self-Doubt

In year 2005, through the initiative of MAO, a group of 24 farmers organized a cooperative of organic vegetable producers. They formed the La Trinidad Organic Practitioners Multipurpose Cooperative (La Top MPC). The cooperative's aim is to provide a sustained market of organic agricultural products and livelihood to small farmers in La Trinidad (La Top MPC Internal Control System Manual, p. 4). The cooperative has grown to 79 farmer-members at present and has expanded to other towns of Benguet, the Cordillera, and the neighboring Region 1 Province of La Union. La Top, together with other smaller organizations in La Trinidad that practice and promote organic farming, a move away from agrochemical-intensive commercial agriculture, suggests that La Trinidad's agriculture is undergoing a kind of self-doubt.

“Organic” has started to gain status as a catchword, although it is not a new concept in the communicative system of agriculture. Organic farming is most probably the ancestor of commercial agricultural production, yet it was not talked about in the past as much and as often as it is now. In the distant past, the semantics of farming had no concern for the “organic” brand; farming was simply as it was. At present, there has emerged a hierarchy of agricultural products. Organic products seem to occupy a special position in the marketplace of vegetables. They are more expensive than conventionally grown ones. Most of their patrons are health-conscious can-affords. Their supply is limited while commercial high-crops abound in every marketplace. Organic vegetables are especially packed to emphasize the “organic” label. Non-organic products are only wrapped in ordinary plastic bags. This crevice between organic and non-organic products, this self-isolation of the free-of-chemical-residue vegetables from crops survived by synthetic fertilizers and biocides, is a remarkable feature of La Trinidad’s public market.

But why has “organic” become a catchword only now? My hypothesis is that it is because “organic” has become a signifier for a structural change within the system of agriculture. Quite radically, it stands in opposition to conventional farming. Its presence in the market, however, has created a gap not only between organic and non-organic products but also between farmers who have already converted their gardens to organic cultivation and those who still cling to the more convenient methods of food production.

The fact that La Trinidad’s agriculture is undergoing a transformation is a curious matter. At present the thrust of the MAO is the ambitious conversion of La Trinidad’s vegetable and strawberry plantations from their excessive dependence on agrochemicals to an absolute independence from these overseas-produced substances. Even BSU, after undertaking joint researches with agrochemical manufacturing corporations, has formed an Organic Agricultural Program³ and launched its own market of organically-bred vegetables and strawberries⁴. Why, after decades of lucrative operation, is the salad bowl phenomenon being altered? And why does its alteration seem to reverse and undo the degree of modernity that La Trinidad’s agriculture has so far attained?

That agriculture self-rethinks presupposes that agriculture’s participants and stakeholders, whenever they take part in the operations of agricultural production in one way or another, engage in communications that question the very operations in which they participate. The people who participate in the productive functions of agriculture talk about, evaluate, and interrogate the ways by which farming has been carried out. Indeed, as will be shown shortly, the participants and stakeholders in La Trinidad’s agriculture, namely the farmers, MAO, and BSU, have all begun perceiving conventional agriculture as flawed.

Agriculture has perceived that there is a tradeoff between the agrochemical-dependent money-making opportunities of La Trinidad’s commercialized salad bowl phenomenon on the one hand, and the sustainability of massively producing high-quality vegetables on the other hand. The MAO stressed the polluting effects of synthetic fertilizers on agricultural soil. It says that the excessive use of agrochemicals has increased the acidity of the soil and reduced its natural plant-nurturing nutrients. That is why, according to the acting manager of La Top, organic farming is necessary as

it endeavors to take care of the soil. Evidently, soil damage means reduced vegetable production and reduced vegetable production means reduced income. Even a conventional farmer like Manong Leon (not his real name) is conscious that the use of chemical fertilizers decreases the fertility of the soil. Despite having been dependent on agrochemicals, he admitted that excessive and repetitive application of synthetic fertilizers destroys the land.

But even this realization of the polluting effect of synthetic fertilizers on soils precipitates a question, for even when soils have become acidic and depleted of natural plant-nurturing substances, farmers can continue growing tons of high-value crops by simply increasing their application of synthetic fertilizers to replace whatever natural nutrients the soils may have lost. Why, indeed, do farmers choose to minimize their use of such manufactured soil enhancers, if not totally liberate their farms from synthetic fertilizer dependence? Why does the MAO choose to promote the gradual conversion of agriculture from inorganic methods to organic means of farming instead of simply generating resources to supply La Trinidad's farmers with more and more synthetic fertilizers? Manong Leon provided me an answer: farm inputs have become more and more unaffordable to ordinary farmers. They now need to reduce their consumption of expensive agrochemicals and think up remedies. From the point of view of ordinary farmers, minimizing the use of commercial agrochemicals does not only reduce damage to the soil; it also, perhaps more importantly, reduces their expenses on farm inputs.

Another factor that agriculture identifies as contributory to its self-critique is that its commercialization has compromised the health both of the farmers and of vegetable consumers. According to La Top's acting manager, almost all of La Top's members suffered from ailments believed to be strongly linked to the use of toxic chemical biocides. Some of them acquired cancers, others skin diseases. And a conventional farmer like Manong Leon himself agrees that one of the most serious effects of conventional farming is that it exposes farmers to poisonous chemicals (See Lu 2007).

The salad bowl phenomenon that drew huge sums of money to La Trinidad's coffers, transforming the town from a fifth class to a first class municipality in less than two decades, is now changing. It has begun to reevaluate its commercialized modus operandi and as a result, has started to undergo a transition. I will discuss the dynamics of such transition in the latter part of the paper. In the meantime, I want to underscore the seeming non-sustainability of commercial agriculture owing to the high-priced agrochemicals on which mass vegetable production has heavily depended. Manong Leon's statement is striking: *if not for the rising cost of farm inputs, farmers might not have considered reducing their use of agrochemicals*. I take this to mean that farmers can endure exposure to the hazardous effects of biocides on their health on the condition that these toxic liquids transforming into inhalable particles do not come in high costs that eat up the farmers' budget and for as long as they can postpone experiencing its life-threatening consequences. Where there is no cheap alternative technology to repel crop-destructive worms and insects, they can—they would choose to—withstand this harm rather than risk losing the only source of their income. Rola (2000, p. 68), for example, points out that the dilemma with organic agriculture is that it seems to be inconsistent with the goal of high productivity. Manong Leon, even as he approves organic farming and considers it beneficial to farmers like him, asked me, "*Mapan mo*

ketdi isa-sacrifice dayta mulam nga isu lang ti pangalaam? (Are you going to sacrifice your plants when they are your only source of income?). The conventional strawberry farmers in the swamp area fear that organic farming will reduce the productivity of their gardens, such that even when La Trinidad's agriculture chooses to change, to reverse its modernization and undergo a kind of "going back to basics," it can only do so gradually (-provided it is at all possible).

But, albeit only slowly, the changing mode of agriculture in La Trinidad significantly indicates its self-rethinking. And it is thanks to the twofold contradictions of commercial cropping. On the one hand, while the value of its outputs grows, so does the cost of its inputs. While it delivers cash to its participants, it also threatens to take it away from them. On the other hand, while it promises abundance, it also risks the health and life of the farmers and their families.

I should not forget to mention that La Trinidad's agriculture has also begun to critique its incorporation into the world economy. For Manong Leon, the difficult life of a food producer has been exacerbated by the country's membership in the World Trade Organization (WTO). He said farming became increasingly difficult when the country's agriculture was compromised to trade-related agreements which force farmers to compete with imported vegetables that are now flooding local markets. Such an imposed competition has led to the reduction of the market prices of agricultural outputs beyond the control of local farmers. And because the cost of farm inputs is unstopably rising, the integration of Benguet's agriculture into international trade spells an economic disaster for local farmers.

In a document that contains La Top's history, the WTO is also implicated as the major culprit in the present agricultural crisis in Benguet. It states:

"The vegetable industry in Benguet is beset with various problems that leave the farmers at the mercy of an inefficient production and marketing system. The change in import policies, resulting from government agreement with the World Trade Organization, ruined the vegetable sector of Benguet in 2002. The massive importation of vegetables from China, Singapore, Australia and other countries drove prices of local vegetables down to levels which rendered the sector unfeasible." (La Top MPC Internal Control System Manual, p. 1)

La Top envisions itself as a response to this crisis. It believes that by forming a farmers' organization, it enables farmers to control the prices of their products.

Organic Farming: “In-innayaden tayo”

At present, La Trinidad's agriculture is undergoing a change, but it cannot afford to radically abandon its conventional ways. A hasty shift to organic farming would seriously disrupt the lives of those who depend on the town's 'salad bowl' reputation. According to the MAO, only 10 percent of the estimated 7,000 farmers have immediately subscribed to the idea of organic farming. While La Trinidad's agriculture seems determined to transform itself, its old ways keep it from overturning its conventional and commercialized state. Thus, it needs to make a compromise between how it envisions itself in the future and how it operated in the recent past. If it is to come up with an alternative method of sustaining itself, it should first create a favorable condition to support its transformation.

Farmers argue that abruptly discontinuing the use of synthetic agrochemicals would starve them and their families. Organic farming would not give them enough profit because the land they have been tilling can no longer produce good-quality crops without the aid of fertilizers. Also, their only means of protecting their plants from worms and insects is to spray chemical pesticides and insecticides, without which they would harvest nothing but pest leftovers.

Manong Leon was reluctant to give in to my request for an interview. He bluntly said he could not help me if my questions would relate to using chemical pesticides and insecticides. Manong Leon, who rents and tills a piece of privately owned land, is wary of media reports about the use of chemicals in Benguet's agricultural production. The media, he complained, accuse Benguet's vegetables of being unhealthy and unsafe, thereby slandering the only income-generating means for farmers. But even as he justifies conventional farming, he and many other conventional farmers are open to the MAO's program to convert La Trinidad agriculture to organic farming. What keeps them from fully cooperating is that they could not adjust to a sudden shift to an organic farming method, which would mean hunger for farmers and their families. As Manong Leon stressed, a sudden conversion to organic farming would be difficult as farmers have been feeding the soils with synthetic fertilizers for many years now. “*Masapol nga in-innayadem, ta nu biglaem a ket mabisin ti farmer... Awan ma-produce da* (You need to slow it down, because if you do it hastily farmers would starve... They would produce nothing).” Even as he acknowledges the benefits of organic farming, he also pleads, “*in-innayaden tayo* (let's take it slowly).”

Indeed, altering the self-reproducing operations of agriculture requires taking into account its still pervasive dependence on the very operations it aims to dismantle and replace. The farmers' reliance on agrochemical-intensive mass food production cannot be disregarded without threatening their economic survival.

There is another condition that keeps farmers from rushing into organic farming. Most of them do not till their own land. Many of them only rent parcels of BSU's real property. Many others rent pieces of land privately owned by the *babaknang* or wealthy landed Ibalois and Kankanaeys, the original settlers of La Trinidad. In the past, indigenous farming in the Cordillera required letting the land rest from cultivation for seven years. I asked Manong Leon if this practice is still possible in modern-day La

Trinidad. His quick response was: “*Mabalin nu bagim ti daga, nu han mo ab-abangan* (It could be done if you own the land, if you are not renting it).” It would be absolutely impractical to let the land remain idle and unprofitable for seven long years while farmers continue paying for it regardless of whether it is productive or not. And the longer farmers remain tied to this tenant-landlord relationship, the less appealing organic farming would be to them, especially in the absence of an alternative technology that would guarantee them the same quantity of outputs that conventional farming so attractively promised (Rola 2000, pp. 69, 72).

The ‘Organic/Non-Organic’ Divide

The discourse about organic products seems to have spurred disagreements among the farming folks of La Trinidad. Marketing organic products implicitly condemn conventionally produced vegetables. La Top’s promotional brochure, for example, contains the following statement:

While washing and rinsing fresh produce may help reduce pesticide residues, it does not eliminate them. Peeling reduces exposure, but valuable nutrients often go down the drain with the peel. The best option is to eat varied diet, wash all produce, and *choose organic when possible to reduce exposure to potentially harmful chemicals.* (emphasis mine)

In the “organic” discourse, La Top has taken a radical position. It questions the idea of converting lands from conventional farming to organic agriculture as gradually as possible. Why do it gradually? If its members could take the risk of potentially reducing their income, if they could bear the brunt of manually and laboriously preparing their own compost and patiently removing pests from their gardens by hand, and if they were able to surpass the disruptive effects of abiding by the rigid standards of organic food production, why couldn’t other farmers take up the same sacrifice?

Meanwhile, conventional farmers like Manong Leon assert that any attempt to change conventional agricultural practices must be “*in-innayad*” (gradual) lest they and their families will plunge into starvation. Manong Leon also questions the notion that there is a growing demand for chemical residue-free vegetables. He disagrees that there is a growing demand for organic products. In fact, he says, consumers prefer non-organic vegetables because they are cheaper than organic ones. That is why, he explains, organic crops need to be isolated and especially packaged. If you display organic and non-organic products side by side in the market without any packaging distinction, organic products will not sell.

There is obviously a conflict of views in the “organic” discourse. The organic/non-organic division of vegetables in La Trinidad’s market reflects a conflict between organic farmers and conventional ones. In the following section, I aim to construct the organic/non-organic divide as symptomatic of agriculture’s continuing evolution as a self-reproducing social sphere and as a necessary consequence of agriculture’s self-rethinking.

Conclusion

I have argued in the beginning of this essay that agriculture as a system is self-reproducing and that as an economic sector, it is indispensable. Precisely because of this, I do not agree with pessimist doomsayers who warn about the looming absolute non-sustainability of agriculture. At best, this pessimism serves as agriculture's immune system, as its alarm clock, alerting it of the necessity to examine itself and change its operations should it deem that there is a need to. I think that this is precisely the role of the initiative for organic farming that has begun to emerge in La Trinidad. It is important to point out that this initiative did not come from outside the sphere of agriculture; it originated from the communicative sphere of agriculture itself. It is both a consequence and a cause. As a consequence, it results from agriculture's communication about its ecological and non-ecological, external and internal environment. As a cause, it has fomented the present conflict within agriculture itself.

- **Agriculture is Economic** I maintain that agriculture is an economic sphere. But what does "economic" mean? An operation or action is economic if it has to do with deferring decisions about satisfying future needs, for which money is needed (Luhmann 1982, pp. 194-195). The economic system in Luhmann's theory and context represents the modern economy of the world's most advanced societies as a system whose "symbolically generalized communication medium" (1995, p. 161) is money, which is the production and reproduction of the ability to make payments (1989, pp. 51-52), always with an eye to securing future needs. If such is the case, then agriculture is an economic (sub) system whose main activity has revolved around the production of crops exchanged and exchangeable for money. The main question in agriculture is whether one it produces or not. That is why La Trinidad farmers remember Pepeng more as an economic loss than as a tragic loss of lives. That is why conventional farmers like Manong Leon are reluctant to convert their farms into organic gardens without first guaranteeing their incomes. That is why farmers loathe the World Trade Organization and its detrimental effects to local agriculture. That is why agriculturists have become worried of La Trinidad's polluted soil condition and its diminishing capacity to nurture crops. That is why the rising cost of farm inputs has led farmers to minimize using them. That is why their non-ownership of the land they cultivate does not allow them to put it to rest for seven years or so, even when their indigenous tradition requires them to. That is why agriculture exists in the very first place. Indeed, even its evolution from being a subsistent household activity to being a commercial venture is economic. And its commercialization has even increased farmers' cash requirements (Prill-Brett, et al. 1994, p. 36) thereby reproducing mass agricultural production and the whole cash-generating modus operandi of agriculture. It is a means of securing the future; it is making use of the present time to strengthen one's capacity to secure the future. Agriculture, therefore, is a means of securing the future. This is what I mean when I say that agriculture is an economic sphere. This is what is probably meant when Cruz, et al. (1994, p. 411) said: "The ultimate objective of the production activities of households is the enhancement of their welfare defined in terms of adequate food, health care, schooling and the availability of consumer credit, among other indicators." There seems to be no difference between this statement and Manong Leon's problem: *"Ta nu awan ti aramidem, ha'n ka agmula, anya ngay ti*

pangalaan ti pamilyam ti kanen da ngay? Anya usaren dagidiay uubbing nga agiskwela? (If you do nothing, if you don't plant, where will your family get food? What will the children use when they go to school?)"

- ***Too Little Resonance, Too Much Resonance.*** Because agriculture operates within the communicative system of the economy, ecological disasters have too little resonance within it. Agriculture has to translate ecological problems into the language it understands, that of money or the capacity to satisfy future needs. Soil contamination and the depletion of the soil's natural nutrients, for example, have been problematized in terms of its threat to vegetable production, not in terms of anything else. Even climate change is represented in the agricultural system in terms of its effects on plants, not in terms of its potential to melt the ice caps of the North Pole, for instance. Pepeng had too little resonance within the agricultural system of La Trinidad, notwithstanding the landslides that buried hundreds of people alive. Even if it sees itself as a direct victim of ecological calamities, agriculture does not construe itself as a major factor responsible for the destruction of the environment. It admits that its conventional ways of vegetable and fruit production are environmentally problematic, but it does not radically respond to ecological problems like soil and air pollution by immediately abandoning its commercialized, agrochemical-intensive processes of production.

But at the same time, there is also too much resonance within the agricultural sphere, and this is revealed by the dispute in the discourse about organic products. Agriculture has an internal environment, which is complex in itself. There are different stakeholders at play within agriculture. They by no means assume a uniform position on any issue affecting agriculture at large. The MAO, a local government department, and BSU, an educational institution, are both urging agriculture to change. However, conventional farmers insist that they cannot survive a radical change in conventional agriculture. Too much resonance spells conflict, this time taking place in the marketplace shared by organic and non-organic vegetables and in the whole La Trinidad valley divided between organic and conventional farming.

- ***Troubled Change: Agriculture's Problematization of the Future.*** So, does La Trinidad's salad bowl problematize its ecological environment, i.e., communicate about it? My answer is yes, but only to the extent that its economic codes of communication can translate ecological dilemmas as threats to securing the future. And such a resonance of ecological problems within agriculture provokes conflicting differences within the internal environment of the agricultural system.

If agriculture is economic and if what is economic has to do with satisfying future needs, then agriculture operates in a temporal dimension, particularly in constructing the future as problematic. I follow Luhmann in saying that agriculture (and any other social system, for that matter) perceives the future "as a temporal horizon of the present" (1982, p. 278). From the point of view of the present, the future is conceived, and conceived as problematic, and it is problematic because it is complexly unpredictable. Thus, the present is important for any system that operates economically because it needs the present to prepare for the future, to accumulate money to be able to secure future needs. If La Trinidad's agriculture conceives its excessive use of synthetic

fertilizers and chemical biocides as problematic at present, it is because it sees them as threats to its ability to secure the future. This problematization of the future is what allows—requires—agriculture to rethink its modes of operation in the present and decide to undergo change. Agriculture, therefore, is necessarily future-oriented, and precisely because of its future-orientedness, it needs the present, for it needs time to prepare for the future. For agriculture, the future becomes more problematic and the present becomes more urgently needed, especially when it perceives and communicates about the risks of ecological predicaments. Thus, the whole idea of converting from conventional to organic agriculture is a symptom of agriculture's problematization of the future. So is the conventional farmers' appeal for a gradual shift. So is La Top's drive to expand its operations. If farmers describe crop production as an arduous occupation, it is because of the need to secure an uncertain future. It is for the same reason that La Top cannot easily decide to lower the prices of its produce. It is for the same reason that the change that agriculture has chosen to take up brings about social fissures among its stakeholders. Finally, it is for the same reason that agriculture needs to pay attention to the perturbations exerted on it by its ecological environment.

Yet, even as agriculture prepares for the future, it finds the future unable to begin. The openness and hence indeterminacy of the future renders it inexhaustible. That is why agriculture cannot but change perpetually, which means to say that it inevitably has to undergo troubles. It was troubled when it remained in its subsistent state; it was troubled when it was pushed toward modern commercialization; it is still troubled today, especially that it tries to move away from its conventional status. I do not wish to speculate whether it will complete its shift to organic farming. Perhaps, for now, it is enough to conceive it as undergoing change. That would probably assure us that it does not remain stuck in complacency.

Acknowledgments

This paper would not have been possible without the assistance of several good souls. Many thanks to the following: Prof. Clemen C. Aquino of the Department of Sociology of the University of the Philippines-Diliman for her excellent and helpful lectures in my social research methods class, for which this research was undertaken; Ms. Nida Organo of the Municipal Agriculture Office of La Trinidad, Benguet; Mr. Leonardo Catiyan; Ms. Abigail Cadias of the La Top MPC; and Prof. Erlinda Alupias of the Benguet State University.

Notes

¹ See La Trinidad's brief history at <<http://www.latrinidad.gov.ph/bief%20history.html>>.

² No date of publication indicated in the document.

³ See Benguet State University Organic Agricultural program at <<http://www.bsu.edu.ph/content/organic/organic.php>>.

⁴ See "Organic Market Launched at BSU." Benguet State University, 30 June 2009. Web. 28 February 2010.

Works Cited

- Adam, Barbaba. *Timescapes of Modernity: The Environment and Invisible Hazards*. London: Routledge, 1998. Print.
- Alupias, Erlinda. Personal Interview. 26 February 2010.
- Barry, Clayton. "The Environment/Society Disconnect: An Overview of a Concept Tetrad of Environment." *The Journal of Environmental Education* 41.2 (2010): 116-132. Web. 08 February 2010.
- "Brief History." La Trinidad, Benguet, 2009. Web. 27 February 2010.
- Cruz, Gladys A., et al. "Agricultural Commercialization in the Sustainable Development of the Cordillera." *Indigenous Practices and State Policy in the Sustainable Management of Agricultural Lands and Forests in the Cordillera*. Unpublished Material. University of the Philippines-Baguio Cordillera Studies Center, 1994. Print.
- Cadiaz, Abigail. Personal Interview. 26 February 2010.
- Catayan, Leonardo. Personal Interview. 26 February 2010.
- Dar, William D. "Agricultural Development in the Highlands." Unpublished Material. University of the Philippines-Baguio Cordillera Studies Center (no date indicated). Print.
- Deb, D. L. and Joshi, H. C. "Environmental Pollution and Agriculture." *Natural Resources Management for Sustainable Agriculture and Environment*. Ed. Deb, D. L. New Delhi: Angkor Publishers (P) Ltd., 1994, pp. 277-294. Print.
- Des Jardins, Joseph R. *Environmental Ethics: An Introduction to Environmental Philosophy*. 3rd ed. CA: Wadsworth Group, 2001. Print.
- "Economy." La Trinidad, Benguet, 2009. Web. 27 February 2010.
- La Top Multipurpose Cooperative. *Go for Good Health! Go Organic! Go La Top!* November 2009. Print.
- La Top Multipurpose Cooperative. *The New Farms Internal Control System Manual*. Print.
- "La Trinidad Vegetable Trading Post." La Trinidad, Benguet, 2009. Web. 27 February 2010.
- Lewis, Martin W. *Wagering the Land: Ritual, Capital, and Environmental Degradation in the Cordillera of Northern Luzon, 1900-1986*. Berkeley and Los Angeles, CA: University of California Press, 1992. Print.
- Lu, J. L. "Acute Pesticide Poisoning among Cut-Flower Farmers". *Journal of Environmental Health* 70.2 (2007): 38-43. Web. 1 March 2010.
- Luhmann, Niklas. *Ecological Communication*. Trans. John Bednarz, Jr. Chicago, IL.: University of Chicago Press, 1989. Print.

Luhmann, Niklas. *Social Systems*. Trans. John Bednarz, Jr. with Dirk Baecker. California: Stanford University Press, 1995. Print.

Luhmann, Niklas. *The Differentiation of Society*. Trans. Stephen Holmes and Charles Larmore. New York: Columbia University Press, 1982. Print.

McMichael, Philip. *Development and Social Change: A Global Perspective*. 4th ed. California: Pine Forge Press, 2008. Print.

"Organic Agricultural Program." Benguet State University, n. d. Web. 28 February 2010.

"Organic Market Launched at BSU." Benguet State University, 30 June 2009. Web. 28 February 2010.

Organo, Nida. Personal Interview. 24 February 2010.

Prill-Brett, June, et al. *A Comparative Study of Commercialization in Selected Highland Communities of the Cordillera-Ilocos Region*. Unpublished Material. University of the Philippines-Bagyo Cordillera Studies Center, 1994. Print.

Rola, Agnes C. "Is the Philippine Ready for Organic Agriculture? Policy Issues and Constraints." *Sustainable Development through Organic Agriculture*. Philippine Council for Agriculture, Forestry and Natural Resources Research and Development, Book Series No. 170. Los Baños, Laguna: PCCARD, 2000, pp. 56-72. Print.

Vulnerability Assessment to Environmental Changes of a Watershed Area in Sta. Maria, Laguna, Philippines

Aurora S. Jose, Ph. D.

Ecosystems Research and Development Bureau, DENR
College, Laguna, Philippines
aurora.jose@yahoo.com

Abstract

The impacts of climate change on the lives of the Filipinos are among the urgent concerns that should be addressed by the concerned agencies in the Philippines. The theories of vulnerability give more meaning when applied to real settings and situations, particularly in the watershed of Sta. Maria, Laguna, Philippines. The Sta. Maria watershed, located at the tail end of Laguna province, was declared as a reservoir for irrigation purposes. However, the landscape of the watershed has changed due to the clearing of the remaining vegetation on the mountain slopes. The river system is now exposed to various risks resulting to threatened productivity and sustainability of the natural resources, which affected the people and the whole community in the watershed.

This paper highlights the study that aimed to determine the factors contributing to the vulnerability of the watershed area, and the strategies and policies that need to be developed to cope with the environmental changes. Results of the vulnerability assessment of the Sta. Maria watershed to environmental changes provided vital information on the factors and the causal effects of vulnerabilities to people and the environment. The vulnerability indicators and the framework are inputs to the local government comprehensive ecological landuse plan as well as in updating the watershed management plans/programs/projects and activities of the Forest Management Bureau (FMB) of the Department of Environment and Natural Resources in collaboration with other research agencies, academic institutions, and non-government organizations.

Keywords: *vulnerability assessment, watershed area, environmental changes, Sta. Maria watershed*

Introduction

The concept of vulnerability has several applications from different perspectives and disciplines. The International Panel on Climate Change (IPCC 2001), for example, relates vulnerability to climate change and gives emphasis on physical vulnerability. Vulnerability is defined as the extent to which the natural and social systems are susceptible to damage from climate change. In this context, it is a function of a system's sensitivity and ability to adapt to climate change.

The application of vulnerability to climate change and food security both describe vulnerable system's characteristics, stressors' type, number of root causes, effects on the system, and time horizon of the assessment (FAO, 2003). These are the essential elements in a vulnerability analysis. In other words, vulnerability is the function of exposure to any hazards or stresses and the people's coping capacity at a certain time. Logically, people who are able to cope with the extreme events are the less vulnerable to perturbation or stresses (Bankoff *et al.* 2004).

Yohe and Tol (2002) defined vulnerability as a function of different exposures and the accompanying sensitivity towards different changes or hazards. In line with this, Metzger and Schroter (2004) introduced the term potential impact which is defined as a function of the exposure and sensitivity. In connection, coping capacity represents the potential to implement adaptation measures so as to avert the potential impacts. Schroter *et al.* (2003) identified the determinants of coping capacity as awareness, ability, and action measured as economic wealth, technology, information, skill, infrastructures, institutions, social capital, and equity.

According to Adger and Kelly (1999), social vulnerability theory provides the theoretical perspective on human capacity to withstand a variety of stressors. It was conceived that humans are directly or indirectly dependent on natural resources of ecosystems to meet their needs for survival, thus, influencing the state and condition of nature which is similarly stressed by the ecosystems-based model. Economic activities aimed to fulfill human needs exceeded the ecological threshold in many ecosystems, particularly the watershed ecosystem.

Dow (1992) cited that the distinct feature of social vulnerability theory is its description of the possible threats to human-environment system, and threats to sustainability. It emphasizes the human response, coping capacity and resilience to absorb perturbation and changes from its environment. It characterizes vulnerability as "the state of individuals, groups or communities in terms of their ability to cope with and adapt to any external stress on their livelihoods and well-being."

From the point of view of Brooks (2003), social vulnerability theory can be referred to as people-based explanatory model of socio-economic vulnerability to a range of stressors and consequences. It applies to vulnerable situations and classification schemes of vulnerability factors characterized as "internal social vulnerability" or "cross-scale social vulnerability". He described social vulnerability as factors that determine the outcome of hazardous events of a given natural severity, which encompasses elements of the physical environment like topography, and biophysical changes, among others.

Based on the different perspective of many authors, the theoretical framework is schematically represented in Figure 1.

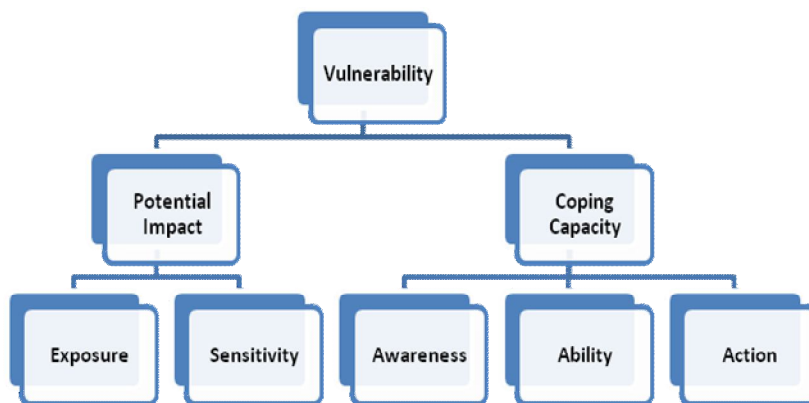


Figure 1. The theoretical framework of the study.

The concept of vulnerability in the context of community development was an assessment of vulnerability of affected groups or individuals. Specifically, it described who these people are; what made them more vulnerable, and what can be done to reduce their vulnerability.

This study is anchored on the theories and concept of vulnerability. The conceptual framework of community vulnerability was formulated through the interplay of variables and indicators such as individual characteristics, social-psychological behavior, the degree of impacts of environmental changes, the state of community vulnerability to environmental changes and response coping mechanisms as shown in Figure 2.

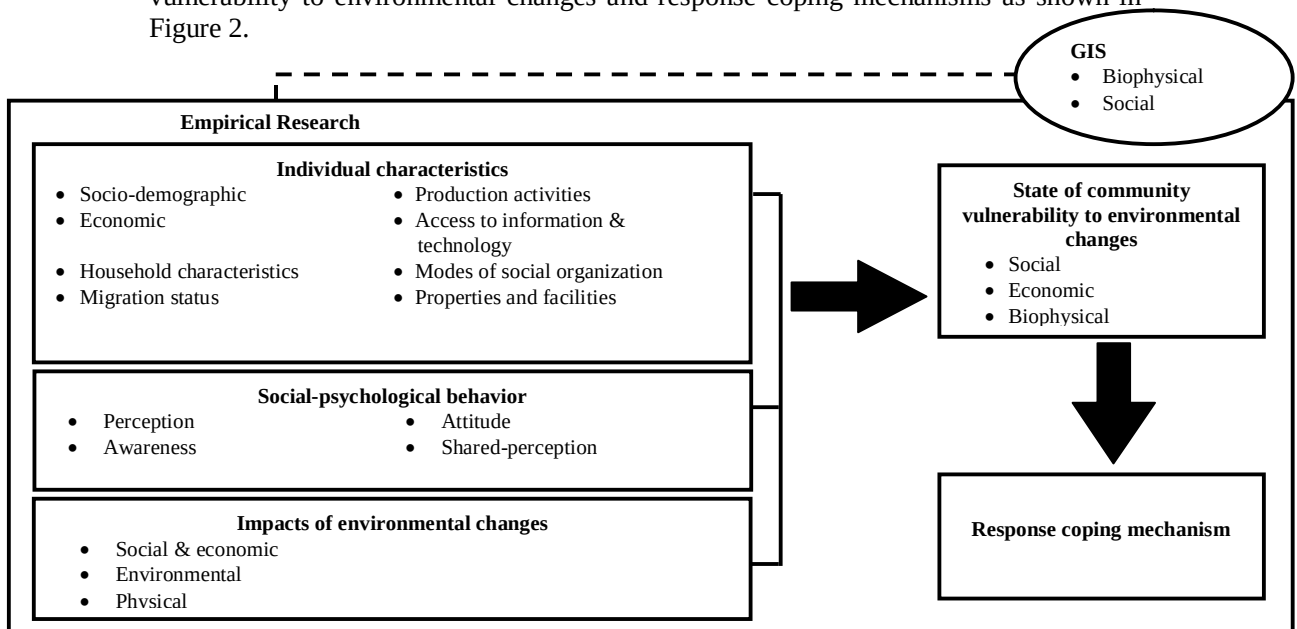


Figure 2. Conceptual framework of the study

Methodology

Study site and sample population

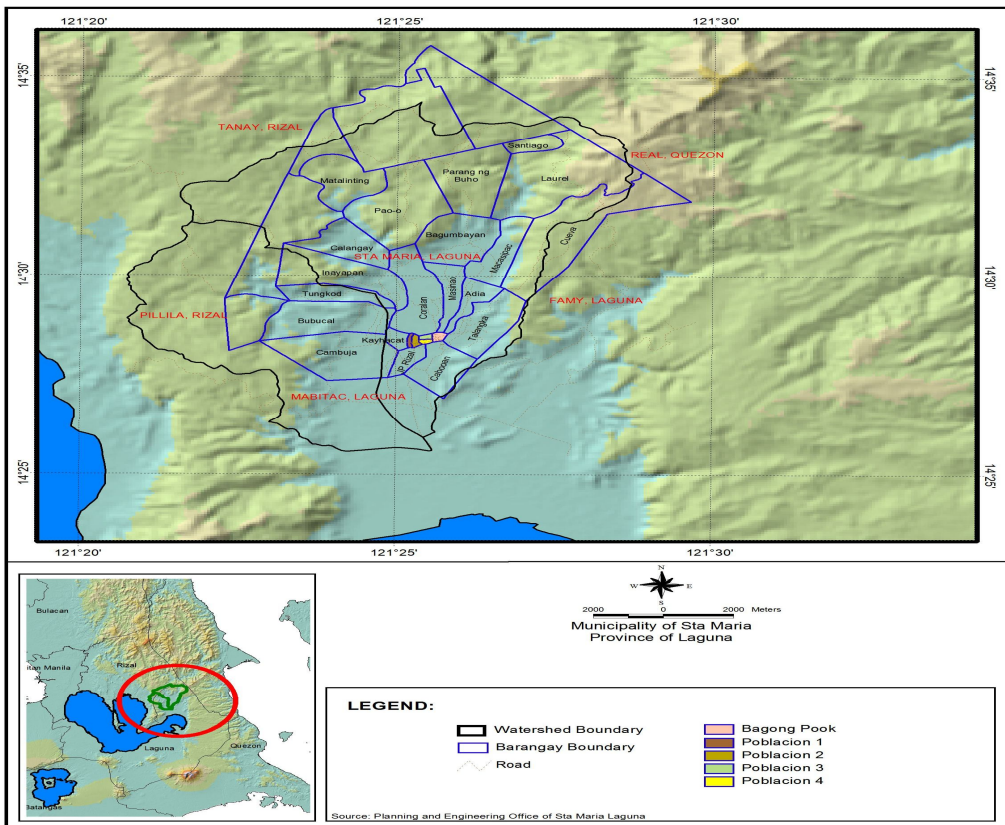
The study site is located in Sta. Maria, Laguna, Philippines. It is classified as a 4th class municipality with a total land area of 12,841.5 hectares consisting of 25 barangays (Figure 3). The town has a mountainous terrain bounded by the provinces of Rizal and Quezon, on the western portion up to the northern tip and north eastern part and municipalities of Famy and Mabitac, Laguna at the southern part.

Twenty-five barangays were categorized into two dimensions of vulnerability to environmental hazards based on Geographic Information System (GIS) mapping and analysis: (1) heavy rain-induced landslide in six barangays in the upstream or highland areas and (2) susceptibility of 19 barangays to flood that might occur in the downstream or lowland areas.

The actual spatial analysis was done using the Arcview 3.2 program through map overlays of five factors and using the program map calculator in computing for landslide vulnerability map. The formula is $\text{Landslide Vulnerability Map} = (\text{slope map} \times 0.40) + (\text{land cover/vegetation map} \times 0.20) + (\text{soil map} \times 0.10) + (\text{geology map} \times 0.10) + (\text{rainfall and typhoon frequency map} \times 0.20)$.

Location of flood-prone areas were identified and mapped out using GIS. Identification of flood plains was through computer delineation of low elevation (0 to 20 meters above sea level) and flat lands.

The sample size of the respondents was statistically inferred at 0.04 permissible errors or at 95% confidence level. The total number of sample respondent is 541 using proportional allocation sampling method.



Source	Types of Data/Information
NAMRIA	Administrative map, 1:20,000 topographic base maps
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)	Climate map (CORONAS classification and generated isohyets from 35 years of rainfall data)
Bureau of Soils	Soil composition map
Mines and Geosciences Bureau (MGB)	Geologic and seismology maps
Municipal Planning and Development Office (MPDO), Sta. Maria	Socio-economic, demographic, political, and institutional profiles (secondary data)
Satellite imagery	Existing land uses, infrastructures and community structures (processed primary data information)
Topographic map	Slope (generated from the digitized 1:50,000 topographic base maps), aspects, bathymetry, digital elevation model (DEM), and 3D landscape (processed primary information)

Methods of Data Processing and Analysis

Qualitative and quantitative (Q^2) analyses were employed using Statistical Package for Social Science (SPSS) software version 12.0 along with the MS Excel. Correlation and multiple regression analyses were done to obtain and describe the household and community levels of vulnerability, and determine the significant factors that influenced the extent of vulnerability in the social, economic, and biophysical dimensions.

Base maps, satellite imageries and other maps containing information such as climate, topography, soil, geology, isohyte (rainfall pattern and volume), among others things were used and analyzed using the GIS.

Results and Discussion

Biophysical factors of vulnerability of Sta. Maria Watershed

Seven (7) biophysical factors were used in analyzing the area's vulnerability to landslide and flooding/flash flood as summarized in Table 2. Sta. Maria River is a 6th order stream wherein the headwater is located at the forest zone of three (3) barangays (Matalingting, Parang Buho and Laurel). The headwater is vulnerable to forest degradation because of rampant cutting of trees and other vegetations including slash and burn activities.

The geologic bases of Sta. Maria watershed are Pliocene-Quaternary rock formation consisting of 6,764.45 ha or 76% of the total area. This type of rock formation has a very high rating in terms of susceptibility to landslide and soil erosion (Presidential Task Force on Water Resource Management, 2007). Based on the Coronas classification, the area falls under Climatic Type II, characterized by season of not very

pronounced maximum rain period (35 year rainfall data from DA-BAR, undated). The annual rainfall in the area is 2000 to 3000 mm as interpolated from rainfall data of four (4) PAGASA stations. Sta. Maria is located in high typhoon incidence belt, which means that it is frequently visited by typhoons passing over Philippine territory (Source: Mapping Philippine Vulnerability to Environmental Disasters, DENR and Manila Observatory).

Two sub-watersheds were found relatively flat (39.35% of the total area of Sta. Maria and 44.13% of Cambuja). The critical slopes of 30-50 percent cover only 18% of the total area while vertical slopes (>50% and above) is about 8.39% of Sta. Maria and 7.97% of Cambuja watersheds. It is located in deep gulley flanking rivers and in a very steep mountain ridges in barangays Laurel and Cueva.

Table 2. Biophysical factors used in the vulnerability assessment of the Sta. Maria watershed.

Biophysical Factors	Vulnerability Rating*	Description
Drainage system (stream)	6 th order	Sta. Maria river had 5,472.95 m length of drainage system that has 3 main river networks converging in the Poblacion areas.
Geology and morphology (rock formation): Pliocene-Quaternary	Very high	6,764.45 ha or 76% of the total area is susceptible to landslide and soil erosion.
Climate: Type II	High	No dry season with pronounced maximum rain period (short dry season -3 months)
Rainfall : 2000 to 3000 mm	Moderate to High	With high volume of rain water accumulated
Slopes of the total area	High	55% of the total area are vulnerable to flash flood/flooding (low lying areas consisting of 19 barangays)
Soil type: tropuduls with tropudalfts tropepts & oxisols; mountain soils with entisols, enceptisols, and alfisols with thermic hyperthermic isohyperthermic temperature regimes	Very highly Vulnerable	59% tropuduls with tropudalfts tropepts & oxisols; 12% covers most of the mountain soil.
Land-use	Vulnerability relative in the location	Spatial locations of various critical areas

Source: Vulnerability rating of priority watersheds in the Philippines conducted by ERDB.

However, because of the circular shape of the watershed, there is a high probability to retain floodwaters longer. A large portion of flood-plain areas with high risk to flooding include the lower portions of Bagumbayan, Inayapan, Tungkod, Bubucal, Cambuja, Cabooan, Talangka, and all the Poblacion areas adjacent to Sta. Maria River (Figure 4).

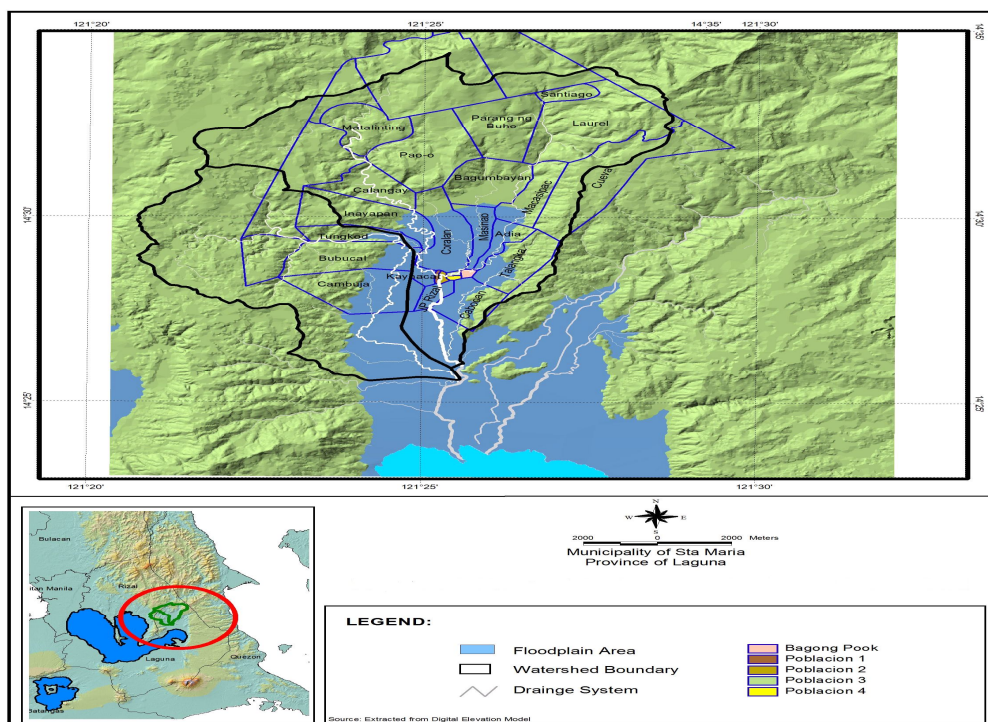


Figure 4. Floodplain area of Sta. Maria watershed.

The soil description of Sta. Maria watershed is tropuduls with tropudalfs tropepts & oxisols (59%) and 12% covers most of the mountain soils. It means that this type of soil is very highly vulnerable to landslides and soil erosion.

In terms of land-use, the Sta. Maria watershed is vegetated with brush/shrub land (44.97%), mixed forest (18.18%), grassland (10.44%) and a big area which is bare (10.3%) located in upland areas. The land-use of the downstream portion of the watershed is rice field (9.92%), coconut land (3.59%), built-up areas (2.31%) and water environment (0.22%).

Identification of critical areas

Critical areas are sensitive spatial locations because of their vulnerability to environmental hazards like landslides and flooding, which need protection because of their important use and special features like forest areas and reservations. Figure 5 shows the critical area map. It includes the river network areas, flood plains, slopes (50% and above), and areas with high to very high vulnerability to landslides.

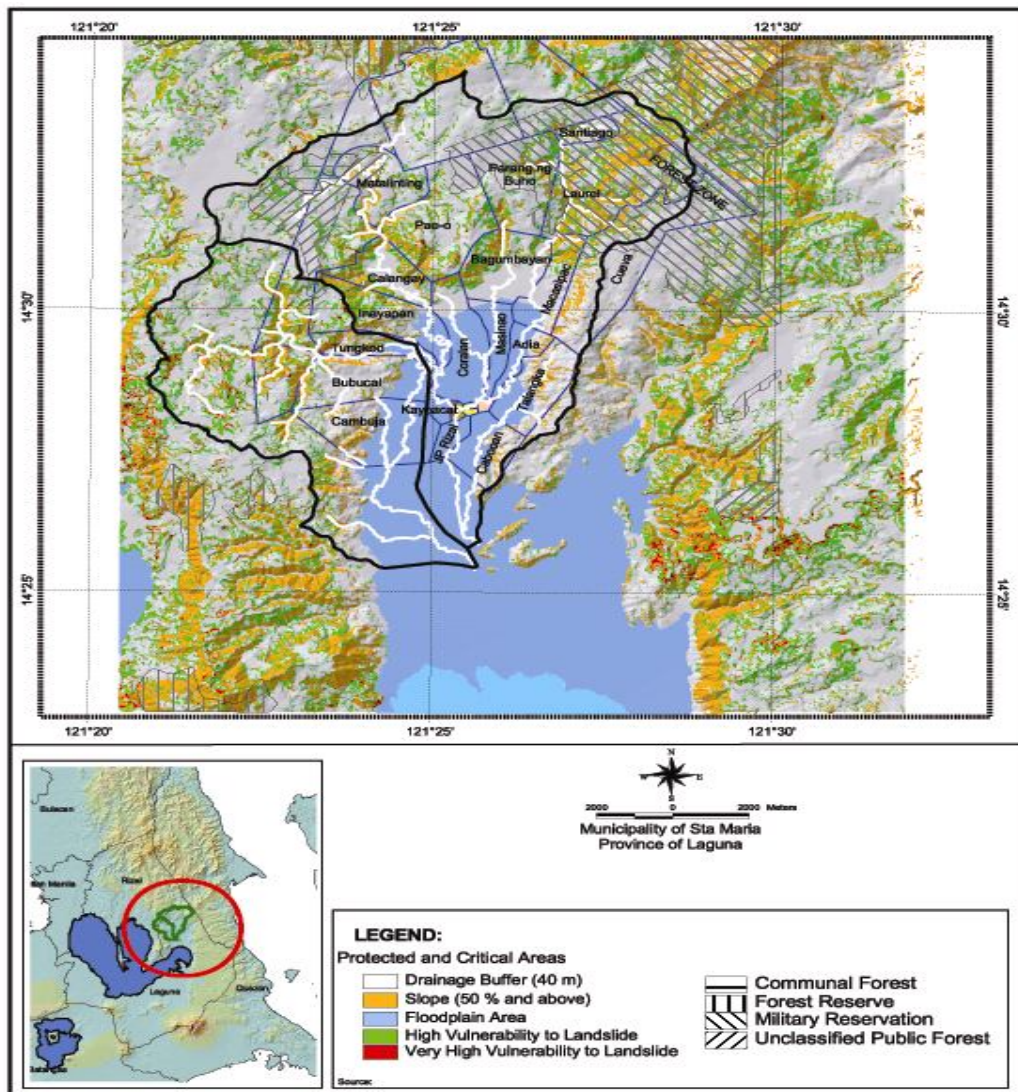


Figure 5. Critical area map of Sta. Maria watershed.

The mountains that surround the floodplains of Sta. Maria are also critical areas because it serves as recharge areas of the river system that supply water for domestic use and irrigation. These important uses of the water need protection and conservation considering that agriculture (rice farming) is the prime economic driver in the area. Figure 6 features some of the critical areas within the watershed of Sta. Maria.



Figure 6. Critical areas that need protection and rehabilitation in the watershed of Sta. Maria, Laguna.

Causal factors of vulnerability to environmental changes

Multiple regression analysis using stepwise method was used to determine the causal factors of vulnerability to environmental changes as shown in Table 3. The causal factors influencing social vulnerability was explained by indicative measurements of tenure system (32.02), basic needs of the family (73.74), susceptibility to flooding (57.16), susceptibility to landslide (59.98), and susceptibility to loss of lives, injuries, and accidents (80.15). Results of the study revealed that there is a “high” social vulnerability possibly due to their lack of knowledge on the impacts of environmental risks that will affect them in the near future.

The causal factors influencing economic vulnerability to environmental changes are measured in terms of income and livelihood (90.92), employment (56.03), and productivity for home consumption (60.79). The overall extent of economic vulnerability to environmental changes was high (69.15) due to occurrence of negative impacts of environmental hazards such as flooding and landslide.

The biophysical vulnerability is the extent of the people’s knowledge in assessing the vulnerability of the watershed, which make the household and community susceptible to environmental changes. The high biophysical vulnerability (73.31) perceivably brought about by poor management of the resources in the watershed, forest degradation and exploitation of the forest resources in the watersheds.

Table 3. Causal factors of vulnerability to environmental of the community.

Causal Factor	Value	Effect
Social vulnerability	60.61	High
Susceptibility to loss of lives, injuries and accidents	80.15	
Basic needs of the family	73.74	
Susceptibility to landslide or soil erosion	59.98	
Susceptibility to flooding or flash flood	57.16	
Tenure system	32.02	
Economic vulnerability	69.15	Very high
Income and livelihood	90.62	
Productivity for home consumption	60.79	
Employment	56.03	
Biophysical vulnerability	73.31	Very high
Community vulnerability	67.69	Very high

Rating:

0.00 – 33.3	=	Low
33.4 – 66.6	=	High
66.7 – 100.0	=	Very high

The overall extent of community vulnerability to environmental changes was high (67.69). It implied that coping mechanisms or mitigating measures to prevent the impacts of the environmental changes need to be instituted.

Response and coping mechanisms

The respondents' insights on the various ways and means to avoid the adverse (direct and indirect) effects to hazards whether natural and man-made are shown in Table 4. It was perceived that coping mechanisms for the impacts of environmental changes were highly needed (2.75). Among the coping mechanisms identified by the respondents were social preparedness for the occurrence of natural hazards such as flash flood or flooding and landslide, awareness of the consequences and risks of environmental changes in terms of lives and properties, and education program on the conservation and protection of the forest through planting of indigenous forest trees, agroforestry, nursery establishment, and river bank stabilization, among other things.

Table 4. Respondents' perception of the need for coping mechanisms.

Coping Mechanism	Weighted Mean
People should have social preparedness for the occurrence of natural phenomena such as flooding, landslide, drought, heavy rainfall, among others.	2.92
People should be aware of the consequences and risks of environmental changes in terms of lives and properties.	2.87
People should have knowledge on the conservation and protection of the forest through nursery establishment, tree planting, reforestation, agroforestry, among others.	2.80
People should have knowledge on community-based resource management and other related tasks for sustainability of the watershed.	2.69
People should be aware of the problems, issues and concerns about the watershed.	2.67
People should be involved in the planning and monitoring, and evaluating the status of the watershed.	2.57
Over weighted mean	2.75

Rating:

0.00 – 1.00	=	Least needed
1.01 – 2.00	=	Highly needed
2.01 – 3.00	=	Very highly needed

These coping mechanisms were further validated through interviews with the key informants (local officials/members) and during the focus group discussions conducted in barangays Poblacion I, IV, and Cabuoan. It was suggested that the communication scheme through community-based flood early warning system on water level rise of Sta. Maria River and social preparedness should be strengthened among barangays, particularly in areas prone to hazards. Trainings on rainfall observation criteria and water level assessment of Sta. Maria River should be undertaken. Disaster management team must be organized. The data needed to prevent impacts of natural hazards is summarized in Table 5.

Table 5. Water level assessment of Sta. Maria river.

Stage	Water level discharge (m)	Elevation	Description	Flood warning
Level No. 1	1.0	46.08	Awareness	Ready
Level No. 2	1.4	47.17	Preparedness	Get set
Level No. 3	2.0	49.35	Response	Go

Source: Proceeding of Disaster Management Workshop cum Training, 2008.

Results of the study implied that there should be several activities to promote preparedness and knowledge on action programs on conservation, protection, and rehabilitation, and strong awareness about the problems, issues and concerns by the different stakeholders living within the watershed. However, more than sixty percent of the respondents were not aware of the uses and benefits derived from the watershed and if environmental changes occur. Ninety-five percent (95%) of them did not even know the causes-and-effects of environmental changes, policies and regulations on the utilization and control of the use of forest resources, and river system to a certain extent like the damages to properties and people's lives. Table 6 presents a simple valuation analysis of the damage/loss of hazards against the rehabilitation measures to reduce impacts of environmental changes.

Table 6. Valuation analysis of the damage/loss and rehabilitation measure to reduce impact of hazards.

Estimated damage/Loss due flooding and landslide	
Farmland	Rice: estimated cost of rice farm inputs + labor Php 35,000 x 1,364 ha. = Php 47,740,000.00
People's lives	Total population of 1 brgy (i.e., J.P. Rizal) as of CY 2008 = 1,171 x Php 20,000/person = Php 23,420,000.00
Mitigating measures	
Rehabilitation through planting of indigenous forest trees	10,000 sq. meter (1 ha) with spacing of 2 x 2 x Php 10.00 per seedling = Php 25,000.00 per ha

Conclusion

The application of the vulnerability concept in the community and environment is an assessment of the factors affecting people's vulnerability and extent of vulnerability to impacts of environmental changes in the watershed ecosystem. Community vulnerability assessment is an important method or tool in the vulnerability context which involved three processes: (1) the empirical research through qualitative survey, (2) the inter-sectoral consultation and community participatory discussion, and (3) the characterization of biophysical condition of the sites using the Geographic Information System (GIS).

Based on the empirical data and analysis on the results of the study, the following conclusions were made:

- Biophysical assessment of Sta. Maria, Laguna watershed indicates a high degree of vulnerability to landslide in erosion-prone areas in the uplands and very high risk of extensive flooding in the floodplains. These impacts significantly affected the well-being of the individuals, households, and the whole community within the watershed, as well as the environment and natural resources of the watershed. Thus, coping mechanisms need to be instituted to prevent and mitigate the impacts of environmental changes such as susceptibility to flooding/flash floods, rain-induced landslides, and other social factors.
- Based on the GIS analysis, vulnerable areas to landslide within the two watersheds were found to be located mostly in the Barangays of Pao-o, Parang ng Buho, Laurel, Cueva, the upstreams of Barangays Calangay, Bagumbayan, Inayapan and some of the barangays located in Tanay and Pililia. Critical hazard areas vulnerable to flooding/flash floods were identified. These barangays include the lower portions of Bagumbayan, Inayapan, Tungkod, Bubucal, Cambuja, Cabooan, Talangka, Adia, Macasipac and all of the Poblacion area, Kayhacat, J.P. Rizal, Coralan, and Magsinao.
- The coping mechanisms identified by the respondents were social preparedness for the occurrence of natural hazards such as flash floods/flooding and landslides, awareness regarding the consequences and risks of environmental changes, and educational program on the conservation and protection of the forest through planting of forest trees, agroforestry, nursery establishment, and river bank stabilization, among other things.

To conclude, vulnerability assessment in the context of community and environment applied in the real settings and conditions, particularly in the watershed of Sta. Maria, provided insights on the causal effects of vulnerabilities to people and the environment. At present, the landscape of the watershed changes and the river is now exposed to various risks threatening its productivity and sustainability.

The results of the study provided vital information in the form of vulnerability indicators/determinants and framework as inputs to the local government comprehensive ecological land use plan and in updating the watershed management plans/programs/projects and activities of the Forest Management Bureau, Department of Environment and Natural Resources (FMB-DENR) in collaboration with other research agencies, academic institutions, and non-government organizations.

Recommendations

Based on the empirical results of the study, the following recommendations were drawn:

- Call for an urgent need to institutionalize the communication system of community-based flood/warning system and disaster management among critical community areas as coping mechanisms to mitigate negative impacts of environmental changes.
- Empower people by promoting a high-level of consciousness and knowledge on the causes and effects of environmental degradation.
- Strengthen the implementation of 20-m buffer zone on both sides of major river systems through local policies.
- Translate land use plan into actual programs and projects to promote protection and conservation measures, i.e., forest habitat conservation and protection, degraded area rehabilitation, riverbank stabilization, establishment of water level and rainfall monitoring stations, and conduct of IEC programs for environmental awareness.

References

- Adger, W.N. and M. Kelly. 1999. Social Vulnerability to Climate Change and the Architecture of Entitlements: Mitigation and Adaptation Strategies for Global Change 4.
- Bankoff, G. R., G. Freks and D. Hilhorst. 2004. Mapping Vulnerability, Sterling: Earthscan.
- Brooks, N. 2003. Vulnerability, Risk and Adaptation: A Conceptual Framework. Working Paper 38, Tyndall Centre for Climate Change Research, Norwich, United Kingdom.
- Dow, K. 1992. Exploring Differences in Our Common Future (2): The Meaning of Vulnerability to Global Environmental Change". *Geoforum* 23.
- Food and Agricultural Organization. 2003. The State of Food Insecurity in the World: Monitoring Progress Towards the World Food Summit and Millennium Development Goals, Food and Agricultural Organization of the United Nations. Rome, Italy.
- IPCC. 2001. Climate Change 2001: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the 3rd Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.

Yohe, G. and R.S. Tol. 2002. Indicators for Social and Economic Coping Capacity Moving Towards a Working Definition of Adaptive Capacity on Global Environmental Change.

Acknowledgement

The author wishes to express her gratitude to the Philippine Council for Agriculture, Forestry and Natural Resources Research Development (PCARRD) for providing the research funds of supporting this study.

The Social Construction of Disaster: Typhoon Ondoy in the Context of Sagrada Familia and Inquirer.net

Dindo P. Café

De La Salle University
dindo.cafe@dlsu.edu.ph

Abstract

Generally, studies on disaster in the field of social science are plain descriptions of the phenomenon, and subjects are simply regarded as victims and rescuers. There is limited initiative to generate theories and methodological advances out of the experiences. These limitations are the primary consideration in this study. Primarily, the aim of this research is to elicit theoretical and methodological contributions to the field of Sociology. This paper revolves on a premise that disaster is not a natural phenomenon but rather a social construction. In broad stroke, the inquiry centers on the social construction of disaster among the members of Sagrada Familia and Inquirer.net. This paper contends that there is an array of contexts that can be used in the analysis of the typhoon Ondoy in the Philippines as a social phenomenon. Specifically, the paper aims to know the representations of Ondoy as articulated in the articles of Inquirer.net, identify the indigenous concepts of Ondoy among the members of Sagrada Familia, and make a comparison of these concepts. Through review of the articles in Inquirer.net, in-depth interviews and observation, the salient themes that surfaced are natural calamity and mishap, and “sakuna”; disaster and tragedy, and “trahedya”; evacuation and “bakwet/bakwetan; assistance and “tulong”; and rebuilding, hardwork and” sipag”, and “paghahandang ispiritwal”.

Keywords: social construction, disaster, natural calamity, disaster, tragedy, evacuation, assistance, rebuilding, hardwork, “sakuna”, “trahedya”, “bakwet/bakwetan”, “tulong”, “sipag”, “paghahandang ispiritual”

The Problematic

The disasters that devastated several communities in the Philippines over the years are medium in which natural and social conceptions of the phenomena can be delineated. The construction of a phenomenon as natural and social is an epistemological process. The predominance of a discourse in honing descriptions of a phenomenon conceals its real meaning and constrains a holistic perspective. There is a need for a critical stance on the ways disasters are conceptually represented in literatures. Generally, there are two corollary questions purported by this endeavor: (1) Are calamities social? (2) What are the social constructions of calamities? This paper argues that disasters are social phenomena anchored within the lives of the people and their social environment. Specifically, the paper aims to determine the representations of the tropical storm Ondoy (Ketsana) in the articles of Inquirer.net; know the concepts of the tropical storm Ondoy (Ketsana) among the members of Sagrada Familia, and, identify the common concepts of tropical storm Ondoy (Ketsana) in Inquirer.net and the members of Sagrada Familia.

This paper limits its inquiry on the concepts of tropical storm Ondoy (Ketsana) from the perspectives of Inquirer.net and members of Sagrada Familia. This seeks to present the multiplicity of meanings of tropical storm Ondoy (Ketsana). This is an attempt to show that meanings associated to tropical storm Ondoy (Ketsana) as a phenomenon is not homogeneous but rather diverse. Also, this invokes the contextualization of the meanings of tropical storm Ondoy (Ketsana).

What is a Disaster? A Sketch of the Existing Concepts of Disaster

Disaster is a complex term to define. It is a concept that is continuously defined and re-defined by experts in the academe, media, state, and even in the church. However, the intention to conceptualize disaster remains problematic. It has been a challenge among experts to lump into one perspective the varied and multifarious nuances of disaster. In fact, positivists failed to generate generalization on the concept of disaster. It remains illusory to construct an objective or universal meaning of disaster. This paper capitalizes on the abovementioned limitation of a positivist perspective on disaster. This argues that disaster can only be defined by considering the social context of it. This means that the conceptualization of disaster should be based on different aspects such as the society where it happens, the people who experience it, the frame of mind of the experts in the academe and media.

The article of David Alexander (as cited by Perry and Quarantelli (2005:25), discusses the different meanings of disaster derived from articulations of experts. Based on the article, *Gilbert (1998:11) regarded it (disaster) as the passage to a state of uncertainty. Following Fritz (1961), who interpreted disaster as a state in which the social fabric is disrupted and becomes dysfunctional to a greater or lesser extent, suggested that "What disaster sociologists actually study is social (structure) change under specialized circumstances"*(Fisches, 2003: 94).

The abovementioned definitions according to Alexander are very tentative and rather specific to a single sociological perspective on disasters. Moreover, these concepts are problematic in other fields such as geophysics and engineering. The crosscurrents of theoretical formulations in Sociology are not captured with one overarching definition of disaster. The themes presented by Alexander do not capture other sociological perspectives of disaster. The difficulty of the conceptualization process is acknowledged by Jigyasu (as cited by Perry and Quarantelli, 2005:107). He firmly asks theoretical questions with his statement. *"What is this reality, after all? Is there anything that we can say is universally "real" or is reality itself a construct, specific to shared values, thinking processes and visions of the groups of people-which we call communities?"*

The question directs to a specific paradigm. Jigyasu is critical to the limitations of an objective conceptualization of disaster to capture the holistic reality that encompasses it. There is a compelling theoretical inquiry that invites revision of the meanings associated to disaster. This serves as a challenge to social researchers to focus on the significance of indigenous concepts that are based on the perspective of people who experience the phenomenon. The theoretical stance is the core argument of social

constructivism that this paper intends to achieve in the context of the members of Sagrada Familia. In one particular case Jigyasu (as cited by Perry and Quarantelli, 2005:107) examines “eastern thought” on the concepts of “space” at “time” in relation to disaster. Jigyasu cited Galtung (1979) and Vatsayan (1994) as social scientist that define “space” differently. According to them”, . . . *In eastern thought, physical manifestation gets directly linked to the understanding at sub-conscious level, which gives shape and deeper meaning to the landscape. Such landscape is constructed through symbolic representations, sometimes even representing the whole cosmos at the micro level.*”

This notion of “space” is conceptually distinctive to the common western concept of space as geographical and physical entity. In the same vein the concept of “time” is defined in the East differently. According to the authors, . . . *“Eastern” notion of time is cyclic; an endless cycle of birth and death, creation and destruction, implying that there is no beginning or an end.*”

Jigyasu (as cited by Perry and Quarantelli, 2005:107) describes this perspective as contradictory to the unilinear concept of time. This posits that disaster is a “cycle of creation and destruction”. At a theoretical sense, this variation in conceptual constructs of time, space and disaster prove that a phenomenon can be viewed at different perspectives. This is the argument that Alexander (2005) wants to highlight when he states, *“However, disaster is not defined by fixed events, or immutable relationships, but by social constructs, and these are liable to change.”*

The theoretical challenge of Alexander is obvious. He basically presses for social constructivism of disaster. Alexander (2005) argues that disaster is mindset, fixity of opinions or states of mind created by events. This mode of defining disaster clearly shows the use “symbolism” in the process of concept formation. In the article of Alexander (2005) Kroll-Smith and Couch (1991) were cited as authors that recognize the function of symbols in conceptualization process of disaster. According to them, *“Any other collective view of disaster, whether it is a rigid one such as a mindset or a more pluralistic one, is achieved by converting complex events into symbolic ones.”*

This point of view capitalizes the pivotal role of language in the formation of deeper and broader concept of disaster. This perspective stresses that language fabricates the meanings constructed by people involved with the phenomenon. Alexander (2005) discusses further the perspective of symbolism. According to him, symbolism is categorized into three, namely: *“. . . functional (i.e., symbolic of physical or social process), linguistic (i.e., a convenient form of notation), and as an allegory or parable (i.e., with a tale to tell, possibly of a moral kind).”*

The functions of symbolism discussed by Alexander offers a rich prospect in the inquiry on disaster. It is an imperative to consider symbolism in studies that analyze themes of meaning system. This is the direction that my paper wants to pursue. Language will play a crucial role in making sense of the disaster that happened during the storm Ondoy (Ketsana).

The Sagrada Familia members as interlocutors

This research was conducted in Sitio Ronggot, Barangay Lecheria, nestled in the coastal area of Laguna de Bae in Calamba City. The community is composed of more or less 80 families. The inhabitants rely on fishing and farming vegetables for their daily subsistence. Ronggot started as a community with seven migrant families from Olivete, Pangasinan who settled in an uncultivated agricultural and coastal area in 1958 to spread out the mission of Sagrada Familia. Most of the people in Ronggot are members of Sagrada Familia that is one of the many religious groups that venerate Doctor Jose Rizal as Holy God and Savior. The Rizalistas opted to settle in Laguna de Bae with a belief that the place is a promise land and a symbol for salvation of souls.

Research Methods

This paper used mix methods in data gathering. First, articles published by Inquirer.net were reviewed to elicit themes associated to the storm Ondoy. The ultimate purpose of the review is to identify the representations of the storm shaped by Inquirer.net. Second, is the observation of the evacuation center where the Rizalista temporarily settled for three months, until the flood brought by the storm Ondoy subside in Ronggot. Observation was also done in Ronggot after the Rizalistas resettled to capture the damages of the storm Ondoy. Moreover, observation was instrumental in providing a deep description of the daily activities of the Rizalistas. Third, in-depth interviews were conducted with elders and religious leaders to tease out concepts of the storm Ondoy. In methodological sense, the paper used triangulation. This strategy in research is essential in the validation of data gathered and a deeper grasp of the researcher on the subjects and the issues under investigation.

Observation of the community is instrumental in describing the condition of the members of Sagrada Familia. Series of observation was done to have a deeper characterization of the subjects. Basically, observation was conducted to capture the daily activities of the people and their physical environment. The damages of the storm Ondoy on the physical environment and properties of the Rizalistas were clearly observed. Moreover, through observation I was able to see the process of recovery of the livelihood of the members of Sagrada Familia through fishing and vegetable production.

The interviews conducted were based on the categories of information in accord with the research problem. In broad stroke, the themes during the interviews are: (1) the concepts of the storm Ondoy, (2) the factors that shape the concepts of Ondoy, (3) the effects of the storm Ondoy to the members of Sagrada familia, (4) the aid or assistance received by the Rizalistas during the storm Ondoy, (5) the institutional shortcomings during the time of Ondoy, and (6) the experience of the Rizalistas in the evacuation center.

Theoretical and Conceptual Framework

This paper uses a combination of theories. First is the ethnomethodology of Harold Garfinkel. The theory of Garfinkel is applicable in the process of forming concepts of the storm Ondoy. The indigenization of the concepts of Ondoy is basically parallel with the basic arguments of ethnomethodology. In a work of Harold Garfinkel (1967), the core theoretical stance of ethnomethodology is presented. According to Garfinkel, *For ethnomethodology the objective reality of social facts, in that, and just how, it is every society's locally, endogenously produced, naturally organized, reflexively accountable, ongoing, practical achievement, being everywhere, always, only, exactly and entirely, members' work, with no time out, and no possibility of evasion, hiding out, passing, postponement, or buy-outs, is thereby sociology's phenomenon.*

As a way of explication on ethnomethodology of Garfinkel, Ritzer (1996) articulated that ethnomethodology,

Sees the objective reality of social facts as an "ongoing accomplishment of the concerned activities of everyday life." . . . in everyday situations individuals invoke or recognize social facts, such as taken-for-granted norms and values, that interpret the meaning of the situation for them. When they make sense of the situation by recognizing implicit social norms, individuals are constructing social reality . . . they are ordering their experiences so that they are in line with what we consider the everyday social world to be like . . . ethnomethodological studies "analyze everyday activities as members' methods for making those same activities visibly-rational-and-reportable-for-all-practical-purposes, that is 'accountable' as organizations of common place everyday activities. (p.262)

However, this study centers on a wider perspective of the Rizalistas on the storm Ondoy. The process of indigenization of the concepts of the storm Ondoy was treated deeper by invoking other theories that will explain the dynamics and mechanism of the process. A theory that elucidate the emic and etic perspectives that shape the concepts of the storm Ondoy among Rizalistas was used in this study. One of the sociologists that can be cited is Pierre Bourdieu. According to Bourdieu the social structure plays a crucial role in the quality of social interaction of people within the society. According to Bourdieu,

The objective structures...form the basis for...representations and constitute the structural constraints that bear upon interactions; but, on the other hand, these representations must also be taken into consideration particularly if one wants to account for the daily struggles, individual and collective, which purports to transform or preserve these structures (Bourdieu, 1977).

The theoretical statement of Bourdieu sketches the reciprocal interplay between agency and structure. An individual has the power to shape the society and, on the other hand, the society shapes people. This is the same argument presented by Georg Simmel.

People produce culture, but because of their ability to reify social reality, the cultural world and the social world come to have lives of their own, lives that come increasingly to dominate the actors who created, and daily re-create, them (Simmel, 1955).

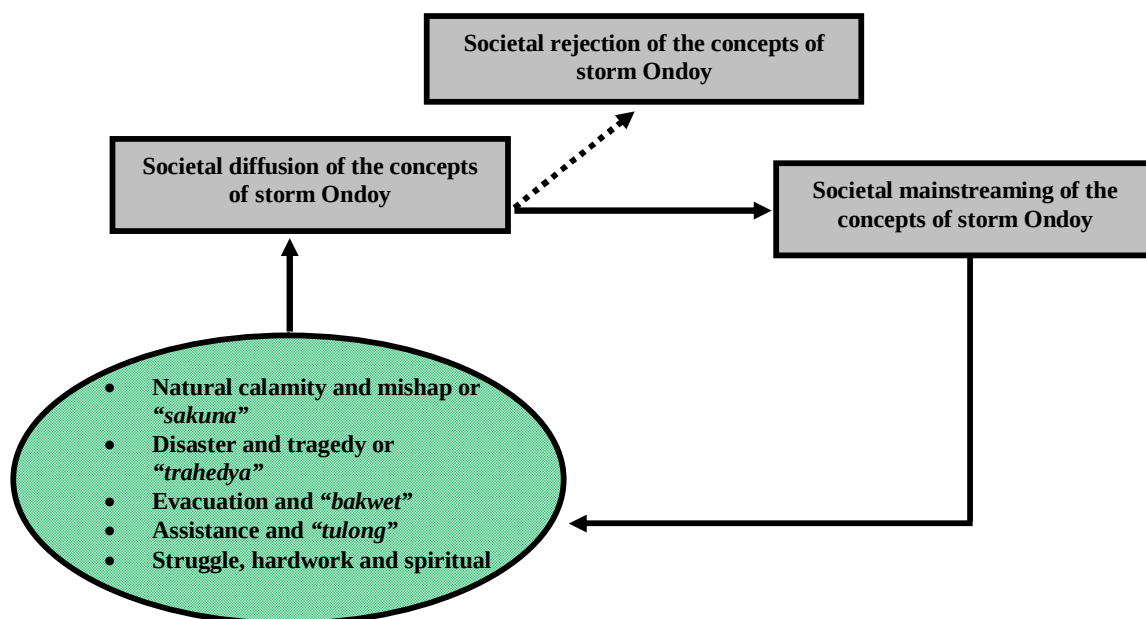


Figure 1. Conceptual Framework

The conceptual framework (Figure 1) is drawn from the theories discussed in the preceding part of this paper. This is a heuristic device that illustrates the integration of the objective and subjective perspective on the storm Ondoy. The theoretical intention of this paper is to elicit the concepts of Inquirer.net and the members of Sagrada Familia on the storm Ondoy in the context of two processes. The concepts of the storm Ondoy will be widely diffused throughout the society. On the other hand, there can be contradictions to the diffusion process of the concepts and will result to retention of old concepts.

Typhoon Ondoy as a natural calamity and mishap, and "sakuna"

One prevalent theme in the articles of Inquirer.net is the representation of the storm Ondoy as natural calamity. The onset of the storm Ondoy in different provinces all over the Philippine archipelago was highlighted in several articles. According to Dizon (PDI, 09/25/09), the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) raised public storm signal warning No. 2 in Catanduanes,

Camarines Norte, Camarines Sur, and Pollilo Island and signal No. 1 in Albay, Burias Island, Quezon, Marinduque, Rizal, Bulacan, Aurora, Nueva Ecija, Nueva Vizcaya, Quirino, and Isabela. Ondoy is expected to be 130 km west-northwest of Dagupan City Saturday afternoon until Sunday afternoon. PAGASA said that "Ondoy" was expected to enhance the southwest monsoon, bringing rains over Central and Southern Luzon as well as in the Visayas.

A day after the announcement of PAGASA, on September 26, 2009 the storm Ondoy landed on other provinces including Metro Manila. Some places in Metro Manila were inundated due to heavy rains. In the article of Tandoc and Evangelista, (PDI, 09/26/09) they wrote,

Storm warning signal number 1 was hoisted over Isabela, Mountain province, Ifugao, Benguet, La Union, Ilocos Sur, Laguna, Cavite, Batangas, Mindoro Provinces, Lubang Island, Marinduque, Camarines Norte, Bataan, Metro Manila and the rest of Quezon Province. President Gloria Macapagal-Arroyo declared a state of calamity in Metro Manila and in 25 Luzon provinces as heavy rains brought by the storm caused the worst flooding seen in the capital in some 20 years. Close to 2,000 people in different areas in Metro Manila were forced to flee their homes and major thoroughfares were closed to traffic.

However, flooding was not isolated to Metro Manila. There were also flooding in different towns in the province Laguna, those that are located in the coastal areas of Laguna de Bae. The upsurge of water in this lake swamped many communities. According to Cinco at Ramos (PDI, 10/04/09)

. . . Parts of Calamba City and the towns of San Pedro, Biñan, Sta. Rosa, Cabuyao, Los Baños, Bay, Victoria, Pila, Sta. Cruz, Lumban, Kahayan, Paete, Sinaloa, Mabitac, Sta. Maria, Pangil and Pakil remained flooded. The average water level from July to September ranged between 11.8 to 12.6 meters. Its water level was at 13.82 meters three days after rains brought by tropical storm "Ondoy" (international codename: Ketsana) submerged Metro Manila and nearby provinces. Manda said the originally 90,000-hectare lake crept into the lakeshores by 10,000 hectares as of their latest monitoring. "It [water level] plays between 13.9 to 14 meters," he said as of Saturday morning. The lake's water level hit an all-time record of 14.62 meters in 1919.

Based on the articles of Inquirer.net, Ondoy as a natural calamity is a lucid representation. The articles stressed out the onset of the storm and massive flooding in different areas in Luzon. There is semblance with the experiences of the members of Sagrada Familia. Based on my interviews with the people in Ronggot, in the City of Calamba the place was inundated. According to Betty,

Yung Ondoy baha ang dala . . . Unti unting lumalaki ang tubig. Noong umaga mga dalawang metro na ang taas ng tubig. Noong hapon hindi pa rin tumitigil ang paglaki ng tubig, nagpasabi na si Kapitan sa kanyang mga tanod na magsilikas na ang mga tao kasi magbubukas daw ang mga dam ng tubig.

Ondoy brings flood . . . The water level rises gradually. In the morning, the water level reaches two meters. During the afternoon, the Barangay Captain sent his tanods to direct the locals to evacuate in fear of voluminous water from dams.

Manong Eufemio shared the same experience when I interviewed him. It is also lucid in his description of Ondoy as storm with flooding. According to him,

Noong una ang Ondoy hindi masyadong nakakatakot. Ang Ondoy hindi malakas ang hangin, kundi ang tubig lang ang umalsa, lumalim. Bagamat ganoon, medyo natakot din kami, yong mga bata pinalikas ko sila. Kalamidad nga, baka anong magyari, ibinalita pa sa radio na aalpasan pa ang dam sa Kaliraya, mas lalong madadagdagan ang tubig. Sa bahay ko nasa tuhod na ang tubig di lalong lalaki. Ondoy was not scary at its onset. The wind was not strong. But there was rise in the water level. I felt scary, and let my children evacuate. The radio announced that dams in Caliraya would discharge excess water and would aggravate flood. My house was already submerged at knee-high water level.

As a way of comparison between the articles in Inquirer.net and my interview accounts, it is noticeable that there is equivalence in themes. First, Ondoy was described as storm. Second, Ondoy brought flooding to coastal communities. However, this parallelism is only at the level of real definition and interviews have different nuances at the level of nominal definition of the phenomenon. The meanings of Ondoy among the members of Sagrada Familia are not bounded to the concepts of storm and flooding. More complex concepts of Ondoy among Rizalistas will be discussed in the succeeding parts of this paper.

During interviews, I was vigilant to know how the locals view Ondoy in a deeper sense. My concern was to know their views on Ondoy in relation to environmental issues that wrestled Laguna de Bae. I am aware of the basis of my perspective. This is coming from a technical and academic discourse derived from reading books and other reading materials, statements of different experts, from scientific community and other sources. However, in my interviews with the members of Sagrada Familia, they have neutral articulation on the association of Ondoy to environmental issues. What is commonly stated during interviews is the five or ten year cycle of storm and flooding. This view is parallel to the description of Jigyasu (as cited by Perry and Quarantelli, 2005:107) on the Eastern perspective of time which is cyclical. It is a natural phenomenon to experience storm and flood every five or ten years. The flooding in Laguna de Bae has no relation to the massive logging and soil erosion from the tributary rivers upland of the lake. Also, they did not associate flooding with the high level of sedimentation brought by massive fish culture in Laguna de Bae.

In my succeeding interviews, I encountered a different perspective of the members of Sagrada Familia on Ondoy. Personally, the way the Rizalistas view Ondoy is novel that it is outside the themes of Inquirer.net and beyond the comprehension of the technical and academic paradigm. According to the members of Sagrada Familia,

Ondoy is a spiritual experience. According to Manang Gloria, Ondoy is (“sakuna”) mishap; this is beyond control of human beings and under the divine power of god. In her statement, Ondoy is,

Isa itong paalala ng diyos. Ang diyos ay kinakalimutan na, kaya ang inang kalikasan, siya ang nagiging mensahe, lalo ang tag ulan. Ang mensahe, kahit saan na hindi dati nalulubog sa ulan ay malulubog. Totoo ito kasi kahit sa Amerika nangyayari ito. Ito ay senyales ng pagdating ng pangtlong “eye”. Nangangahulugan na mas matindi ito, tulad nga ng mga nangyayari. This is a sign from god. God is almost forgotten, thus made the natural calamity, especially rains as warning. The message is massive flooding even in places not vulnerable to it such as America. This is the sign of the coming of the “third eye”. This means ruthlessness as it happens today.

Also, the eldest member of the Sagrada Familia presented the same belief on the reading Ondoy as a phenomenon. According to Manang Bebeng,

Kinompas ng Mahal na Birhen na ang lumang Calamba, ang Aplaya ay lulubog sa Laguna de Bae. Lahat ng sinabi sa amin ng spiritu ay nagaganap. Ang nagdaan na bagyo ay siya nang pangatlong “eye”. Ang unang “eye” ay ang pagsakop sa Pilipinas ng mga Hapon. Ang pangalawang “eye” ay ang pagbalik ng mga Amerikano pagkatapos ng tatlong taon at pangbobomba sa Pilipinas. At ang pangatlong “eye” ay napakalungkot. Ito na ang paghuhukom ng panginoon. Ito na daw ang simula, senyales ng katapusan ng mundo. Ang mga elemento ng kalikasan, tulad ng hangin, bagyo, ulan, ay pinapakilos ng panginoon. It is destined by Beloved Virgin that the old Calamba, the Aplaya will submerge in Laguna de Bae. All the spiritual messages are becoming real. The storm is the “third eye”. The “first eye” is the invasion of the Philippines by the Japanese. The “second eye” is the reinstatement of the Americans three years after bombing the Philippines. The “third eye” is the most miserable. This is the judgment day of our god. This is the beginning, the sign of the end of the world. The elements of nature such as wind, storm, and rain are mobilized by god.

This is an atypical perspective on the explanations of storm and flooding. As a devout Christian, I also encountered religious messages of apocalypse and Armageddon, but the concept of three “eye” is distinctive. This is divergent to the meaning attached to the three “eye” or an eye inside a triangle as “all seeing eye”. I now realized the importance of the symbol to the members of Sagrada Familia. My epiphanies continued when the members of Sagrada Familia described their solutions to the natural calamity. The concepts of (*kabutihan*) goodness, (*pagkakaisa*) unity, and (*ispirituwal na paghahanda*) spiritual preparedness are key values in the statements of Manang Bebeng. According to her,

Kaya dapat hindi na tayo gagawa ng masama. Gawin natin ang mabuti. Sana huwag na tayo mabalik sa masama . . . Pagkakaisa. Kahit saan ka man na relihiyon, respetuhin mo ang ibang paniniwala. Kasi iisa lang naman ang

diyos natin. Tatlong persona pero iisang diyos lang. Si Rizal, si Apo Ignacio, at si Hesus ay iisa lang . . . Ang iba kasi materiyal na bagay lang ang tinitingnan. Kailangan talaga ang paghahanda na spirituwal. We should not live a crooked life. Let us be good. Let us not return to evil . . . Unity. Everyone should respect other religions. We have only one god. It is Holy Trinity. Rizal, Apo Ignacio, and Jesus Christ are one . . . Others just give importance to material things. Spiritual preparation is needed.

I was all the more enlightened on the concepts of Ondoy among the members of Sagrada Familia when Manang Gloria shared to me their rituals to spare themselves from typhoons and floods. This notion of prevention is divergent to techniques promoted by experts in the scientific community. The members of Sagrada Familia have faith on spiritual preparation as prevention to natural calamity. According to Manang Gloria,

Nag “aalay” o “naghahain” kami ng pagkain, tulad ng manok, tinapay, malagkit at prutas. Ang para sa hangin ay binabalot at isinasabit sa kahoy. Ang para sa tubig, sinasabitan ang supot ng pagkain ng mabigat na bato para lulubog. Ang sa apoy, ay susunugin. Ang sa lupa, ibabaon. Ito ay ginagawa unang lingo ng Mayo. We are offering food such chicken, bread, glutinous rice and fruits. Offerings to wind are hanged on trees. Offerings for water are submerged in the lake. Offerings to fire are burned. Offerings to land are buried. The rituals are done every first week of May.

The concept of Ondoy that is unique on my interviews is the consideration of the phenomenon as a mishap. This concept is different from the notion of tragedy that I will discuss in the next chapter of this paper, as this captures the religious aspect of the phenomenon. Tragedy was conceived as the negative effects of Ondoy to their environment, properties, livelihood and their spirituality. On the other hand the concept of mishap capitalizes on the uncontrollable character of Ondoy. This presses for the incapacity of human beings to control the phenomenon as it is solely under the will of god and the only intervention that people are capable of doing is through prayer. Clearly, this is a religious point of view on Ondoy as a phenomenon. This notion is anchored on the religious beliefs of the members of Sagrada Familia.

Ondoy as a disaster or tragedy and “trahedya”

In my interviews, the concept of tragedy emerged in association with the storm Ondoy. In my analysis the concept of tragedy is based on the damages brought by the storm Ondoy. There is a strong association among the members of the Sagrada Familia of the storm Ondoy to tragedy. Specifically, tragedy for them refers to the damages to their properties and the barangay electric system, and disruption in their daily source of livelihood. According to Betty, (*Ang Ondoy*) *Isang trahedya talaga. Kasi marami ang naapektuhan, tulad ng nasira ang mga bahay at kabuhayan. Mayroon pa ngang namatay. Dalawa ang patay na natagpuan sa may Igat. (Ondoy) is really a tragedy. It has tremendous effects such as damages on houses and sources of living. There are also recorded deaths. Two dead bodies were recovered in Igat.*

The issue of death is also a major theme in the Inquirer.net. An article discloses the number of casualties during the storm Ondoy. During the first countdown of the deaths, Evangelista (PDI, 09/27/09) stated that, at least 73 persons were killed by massive flooding after tropical storm Ondoy dumped the heaviest rainfall on Metro Manila. The number of casualties increases rapidly. In the article of Uy (PDI, 10/01/09), she reported that the death toll from Storm Ondoy rose to 280.

In a separate interview with Manong Eufemio, he narrated his conception of the storm Ondoy as a tragedy. According to him,

. . . noong dumating na ang alon, yon na ang naging problema namin. Sira sira ang mga bahay. . . Number 1(problema) ang pinagkukunan naming ng kabuhatan. Hindi na namin alam kung saan kukuha ng kangkong, kasi tinangay ng alon. Pangalawa, itong aming wire ng kuryente, ng ilaw, nagkalagotlagot dala ng mga water lily na dala ng tubig. When the waves come, that became our problem. Our source of livelihood becomes problematic. We do not know where to harvest water spinach as they are drawn by waves. Second is the wire of our electric system that has been damaged by water lily due to strong current of water.

The concepts of tragedy and damages brought by the storm Ondoy are also articulated in the articles in Inquirer.net. Presented in the aforesaid on line newspaper are statistical calculations on the damages of properties and sources of living due the storm Ondoy. According to Olchnodra (PDI, 09/28/09),

Farm lands in the Calabarzon (Cavite, Laguna, Batangas, Rizal, and Quezon) region suffered a combined P95 million in crop damage because of typhoon Ondoy according to initial reports from the region. Of the total crop damage, P85 million worth of rice was reported lost as well as P10 million worth of high value crops.

A more tremendous damage was estimated in the article of David (PDI, 10/09/09). According to him the storm Ondoy has enormously affected the economy of the Philippines. He wrote,

The government has placed the economic impact of Storm Ondoy at P8.3 billion, derived mostly from estimates of damaged infrastructure, homes and crops, and the cost of rescue and relief operations . . . an economist connected with a multi-lateral institution places the total economic damage at P14.9 billion. His estimate includes losses of up to P2.5 billion in the housing sector; P88 million (which amount could reach up to P140 million) in “access cost of students” who were displaced from their schools which were converted into evacuation centers; and P290 million in “foregone revenues of the dead.”

Evacuation and “bakwet/bakwetan” during the storm Ondoy

The term “bakwet” is commonly used by the members of Sagrada Familia. This concept is the local translation of the English word evacuate. The term originated from Pangasinan, that when the Rizalistas migrated from Northern Luzon they brought with them cultural orientation and language. Based on my interview accounts, “bakwet” was spearheaded by the Barangay officials of Lecheria that has the jurisdiction of Sitio Ronggot. In the afternoon of September 26, 2009, when the water of Laguna de Bae was constantly rising, the members of the Peace and Order Council instructed the people to evacuate. The elementary school of Lecheria was used as temporary shelter of the evacuees. Nineteen (19) families are sometimes jam packed in small classrooms. Not all the 86 families settled in Ronggot were accommodated in the evacuation center. Some of them just stayed in their relatives and friends, and others have rented houses. The evacuation lasted for three months, from September 26, 2009 to December 26, 2009. As of the time of my fieldwork, there were some families that are still in their rented houses.

The theme of evacuation due to extreme flooding was also covered in the Inquirer.net. In an article, Lapitan (PDI, 09/29/09) reported that,

...3,000 families in this city were evacuated to safe ground as floods spawned by typhoon Ondoy swamped this city. . . while the city's Action Center said 3,084 families or 15,765 individuals were already in 43 designated evacuation centers in the area. It added that so far, 4,598 families or 22,015 persons in this city (Calamba) either fled from the floods or lost property due to the floods spawned by typhoon Ondoy.

In another article written by Dizon (PDI, 10/10/09), he noted the plan to relocate people survivors of the storm Ondoy through the lead of the Department of Social Work and Development (DSWD). He pointed the protracted process of evacuation. According to him,

DSWD Secretary Esperanza Cabral yesterday said it could take a year for the government to relocate some 70,000 families affected by tropical storm Ondoy. . .the government would need some P4.7 billion for the relocation of the evacuees. . . each housing unit would cost some P75,000. The affected families are mostly informal settlers in Laguna Lake, the Manggahan Floodway area and the Marikina River.

In my interviews with the members of Sagrada Familia, they presented an elaborate description of their experiences in the evacuation center o “bakweten”. According to Manang Gloria, it was a miserable experience. It was difficult for them to sleep due to noisy environment. Often times, they sleep at twelve o'clock in the midnight. Another interviewee has the same experience. Betty shared that their stay in the evacuation center is,

Ang gulo. Mahirap. Sa isang room ilan kayo, 19 pamilya. Ang dami, minsan ang anak ng isang mag asawa walo, di sampo na sila sa isang pamilya. Ang iba sa labas nalang sa may upu upuan nalang natutulog. Makalat, marumi kasi may mga bata. Tapos ang palikuran na ginagamit ay dalawang butas lang. Sa dami ng gumagamit, bago ikaw, pipila ka muna ng matagal. It was disorganized. It was a difficult experience. There are 19 families in a room. It was overcrowded; sometimes a couple has eight children, making them ten in a family. The place is messy because of the babies. There were only two pit toilets, so you need to fall in line every time you need to use it.

Palumbarit (PDI, 2009) presented a more depressing story about evacuees. In the title of his article “Duck pens shelter Laguna town evacuees” one can relate to the sacrifices experienced by the survivors of the storm Ondoy. According to him, *“There are no walls or ceilings and instead of a floor, rice hull covers the ground and fills the air when wind blows or someone steps on it. This is a duck pen and home to four families who fled flooding in this town brought by Tropical Storm Ondoy. About 100 square meters, the structure that used to keep hundreds of ducks now provides shelter to the families, who could not return home because the flood has not subsided weeks after Ondoy left.*

In the case of my subjects, men experience being bored in the evacuation center due to the disruption of their daily activities. According to Betty, *puro tambay lang ang nangyari sa bakwetan kasi wala ka namang gagawin doon, nakakainip. Kahit ang dami naming naboboring ako . . . Sabi ko nga mas maganda pa dito sa Ronggot kahit mag isa lang ako kasi may hanapbuhay.*

We just stand by because there is no task to be done. Although there are a lot of us, we are bored. I said it is better to be here in Ronggot even if I am alone at least I have a source of income.

Manong Eufemio also shared his similar experience in the evacuation center. Just like Betty, he missed the usual routine in a day. According to him, *“. . .namimis ang lugar na ito, kasi iba ang kilos mo dito, iba ang kilos mo doon (bakwetan). Buti nalang malapit naman, dito nalang muna kami ang mga lalaki pag gabi. Pinapasyalan na lang (namin) ang mga bata sa bakwetan. (We missed the place because we behave differently here and in the evacuation center. It is good that the place is near, that we stay here during night. We just visit our children in the evacuation center).*

The assistance and “tulong” to the survivors of the storm Ondoy

The storm Ondoy brought negative as well as positive effects. I also heard good stories from some of the members of Sagrada Familia. According to Manong Eufemio, we are fortunate during the storm Ondoy because there was an increase in our fish catch. He stated, *Bagamat ganoon meron ding kaunting kasayahan. Tulad ng lumabas ang maraming isda. Nanagana rin kami sa isda, nakawala sa mga fish cages, kaya ang aming kanti punong puno ng huli. Maganda sa amin sa amin, swerte kami. (We found*

gratification with what happened. There was abundance of fishes coming from the cages that our fishnets are full of fish catch. It good for us, we are really fortunate).

This is also the experience reported by Mallari (PDI,10/05/09) in his article entitled “Ondoy brings windfall to lake fishers”. According to the article, *If there’s a good side to Tropical Storm “Ondoy,” it could be the tons of fish that needed little effort to catch and brought windfall to fishermen around the Laguna Lake. Rey Manangan, coordinator of the Pambansang Lakas ng Kilusang Mamamalakaya ng Pilipinas (Pamalakaya), said fishermen’s average catch in the aftermath of Ondoy rose to 7.5 kilograms. It used to be 4 kilograms. Ondoy, Pamalakaya said, let out tons of bangus, tilapia, and other types of fish from fish cages in the lake.*

The stories of giving aid and assistance to the survivors of Ondoy have been part of the themes in the Inquirer.net. There are many stories that recognize the kindness of other people to the extent that they lost their lives in rescuing victims of the storm. In the article “Ondoy volunteers, donors: Lifesaver to multitudes” the benevolence of our Filipinos has been acknowledged. According to the article,

They were lifesavers to the multitudes who struggled to keep their heads and hopes above water, whether against the torrents of destruction or the slow currents of despair. They were the volunteers and donors who, in countless ways, helped the battered populace and the nation’s downcast spirit recover from the devastation wrought by Tropical Storm Ondoy. Parishes, schools, companies, and civic groups set up networks of relief-processing centers, where thousands of volunteers worked in shifts for weeks.

Another salient theme in the Inquirer.net is the donations of the international community to the victims and survivors of the storm Ondoy. In one of its articles released on November 22, 2009, the it has been reported that,

The European Commission, the European Union’s executive branch, has allocated an additional €7 million (about P490 million) in humanitarian assistance for the victims of typhoons Ondoy.

In the province in Laguna, the local government shouldered the expenses for the medicines of patients who were inflicted with disease due to flooding. According to Cinco (PDI, 10/16/09),

Local authorities have announced they will buy medicine to help contain a possible outbreak of leptospirosis in this town, which has stayed flooded since Typhoon "Ondoy" devastated a large swath of Metro Manila and nearby provinces nearly three weeks ago.

Assistance has been a great help to the members of the Sagrada Familia especially when they were still in the evacuation center. There was a sufficient supply of food such as rice, noodles, can goods and water. Different organizations that include Canossa Sisters, Saint Joseph College, Seventh-Day Adventist, the Local Government Unit (LGU) of Calamba City and DSWD; were active in giving relief goods.

The assistance of the LGU of Calamba City continued even after the evacuees returned to Ronggot. A half sack of rice and a financial assistance of three thousand pesos were given to the survivors of the storm Ondoy. They are grateful with the aid given to them; however there are criticisms on the way it was distributed. According to Manang Mareng,

May mali sa pagbibigay nila ng tulong. Dapat ang mga nawalan ng bahay malakilaki ang bigay sa kanila. Pero hindi, ang nangyari parepareho lang ang bigay. Tapos kung sino ang kaibigan ng mga namamahala yon ang nabibigyan. Samantala may mga nasiraan ng bahay tapos hindi nabigyan ng tulong. There was a problem in the distribution of assistance. Ideally, the distribution of the aid should not be the same for everybody but should be commensurable to the destruction of their properties. Those who are friends of the project manager received the assistance. However, those with wrecked houses did not even receive aid.

This is also the comment of Manong Eufemio in his statement during my interview. According to him,

. . . hindi lahat nabigyan, kung sino pa ang sira ang bahay hindi pa nabigyan. Not all were given assistance; those with damaged houses did not receive aid.

The members of the Sagrada Familia were emotional as they shared to me the stories of their experiences regarding the assistance they have received from different sources. They affirmed the help extended to them. However, the Rizalistas are clamoring for assistance to their source of livelihood. Alternative sources of income will be a great help for them according to Manong Eufemio. A big boat that will serve as a community transport will also be an appropriate aid to them. Also, they need the reconstruction of the electrical system of the barangay. Moreover, Manang Mareng is suggesting a provision of an elevated settlement that will serve as evacuation center during typhoons and floods.

Rebuilding, hard work and “sipag”, and “paghahandang ispirituwal”

Three months after the members of the Sagrada Familia temporarily settled in the evacuation center, they returned to Ronggot a day after Christmas, on December 26, 2009. It was a common story for everybody to repair and fix their houses and other properties. The experience was so sad to them, however they need to struggle, to gain back normalcy of their lives. This is the theme in the article in *Inquirer.net* released on January 13, 2010. According to the article,

Schools and covered courts here (Laguna Bay) are finally empty of evacuees as victims of Tropical Storms “Ondoy” and “Santi” are starting to rebuild their homes. The only evacuees left—153 families—are staying in temporary shelters donated by the Swiss government, while others have rented apartments or are staying with relatives. Some families have begun rebuilding their homes as the flood has receded in lakeshore areas.

The homecoming of the members of the Sagrada Familia was the most victorious episode of their lives. The three-month long stay in the evacuation center is so far their longest experience, thus they have a strong impulse to return back home. They are already spared from the shame of disturbances to teachers, students and parents staying in the school as evacuation center. I pondered on the impact of the storm Ondoy on the livelihood of the people in Ronggot. They were able to recover; they have now a normal source of living. According to Betty, the people in Ronggot are “masisipag” or hardworking; they are now again into fishing and water spinach farming. Manong Eufemio proudly shared to me the recovery of their water spinach plantation after two months from the time they return back to Ronggot. These interview accounts clearly present the struggle and hard work that they need to do in order to surpass the effects of the storm Ondoy.

In other interviews, the response to the effects of the storm Ondoy is viewed differently by the members of the Sagrada Familia. On another level, the Rizalistas believe that the storm and flooding are not environmental and natural disaster but rather a spiritual phenomenon. Being such, it implies to address the problem in spiritual sense. According to Manang Gloria and Manang Bebeng, we need “paghahandang ispirituwal” or spiritual preparation. For them the phenomena of storm and flooding are signs of the end of the world. The motion of the environment signals the “third eye”, which is the dissolution of the universe. This is to prompt those who failed to believe and lost their faith to god.

Conclusion

Constructivism is a practical lens in the analysis of the storm Ondoy as a social phenomenon. This study establishes an argument that a phenomenon can be viewed away from an objective standpoint. Through a panoptic gaze of the storm Ondoy, this study capitalizes on the perspective that a phenomenon is socially constructed and dependent on social context. It anchors on the multiplicity of meanings as theoretical premise. This study proves that the storm Ondoy means differently to the members of Sagrada Familia and Inquirer.net. The concepts elicited through this study include: natural calamity and mishap, and “sakuna”; disaster or tragedy and “trahedya”; evacuation and “bakwet”; the assistance and “tulong”; and struggle, hardwork and “sipag”, and “paghahandang ispirituwal”. The concepts used by the members of Sagrada Familia and Inquirer.net may have some semblance but in deeper sense, the nuances are different. The Filipino terms encompass the uniqueness of the experiences from the perspective of the Sagrada Familia members. This has a significant implication to the process of designing appropriate responses and interventions to the problem. At the level of program design, deep understanding of the storm Ondoy will be significant in formulating practical, problem specific and participatory approaches.

In theorizing, this study demonstrates the applicability of constructivism as theoretical frame in the analysis of the storm Ondoy in the context of the members of Sagrada Familia. Also, in methodology, this study exhibits the use of mixed qualitative methods in data gathering. The use of triangulation in this study sharpens that

description of the phenomenon. Through the use of in-depth interviews, review of articles and observation, the meaning of Ondoy was broadly captured.

References

- Cinco, Maricar. 2009. "Distribution of medicine vs leptospirosis in flooded Laguna town eyed." <http://newsinfo.inquirer.net/breakingnews/regions/view/20091016-230404/Distribution-of-medicine-vs-leptospirosis-in-flooded-Laguna-town-eyed> (March 21, 2010).
- Cinco, Maricar and Marlon Ramos. 2009. "Laguna Lake rising to critical level." <http://newsinfo.inquirer.net/inquirerheadlines/nation/view/20091004-228271/Laguna-Lake-rising-to-critical-level> (March 21, 2010).
- David, Rina Jimenez. 2009. "Ondoy': Counting costs and blessings." <http://opinion.inquirer.net/inquireropinion/columns/view/20091009-229121/Ondoy-Counting-costs-and-blessings> (March 21, 2010).
- Dizon, Nikko. 2009. "Ondoy intensifies into storm; alerts up." <http://newsinfo.inquirer.net/breakingnews/metro/view/20090925-226893/Ondoy-intensifies-into-storm-alerts-up> (March 21, 2010).
- Dizon, Nikko. 2009. "Ondoy" victims' relocation to take a year-DSWD chief." <http://newsinfo.inquirer.net/breakingnews/nation/view/20091010-229356/Ondoy-victims-relocation-to-take-a-year-DSWD-chief> (March 21, 2010).
- Evangelista, Katherine. 2009. "73 dead, more than 300,000 displaced by Ondoy." <http://newsinfo.inquirer.net/breakingnews/nation/view/20090927-227130/51-dead-280000-displaced-by-Ondoy> (March 21, 2010).
- Lapitan, Karen. 2009. "1 dead, 3,000 families evacuated in Calamba City." <http://newsinfo.inquirer.net/breakingnewsregions/view/20090929-227479/1-dead-3000-families-evacuated-in-Calamba-City> (March 21, 2010).
- Mallari, Delfin. 2009. "Ondoy brings windfall to lake fishers." <http://newsinfo.inquirer.net/topstories/topstories/view/20091005-228418/Ondoy-brings-windfall-to-lake-fishers> (March 21, 2010).
- Olchondra, Riza T.. 2009. "Ondoy destroys P95M in crops in Calabarzon." <http://business.inquirer.net/money/breakingnews/view/20090928-227277/Ondoy-destroys-P95M-in-crops-in-Calabarzon> (March 21, 2010).
- Palumbarit, Clarice Colting. 2009 "Duck pens shelter Laguna town evacuees." <http://newsinfo.inquirer.net/inquirerheadlines/regions/view/20091119-237223/Duck-pens-shelter-Laguna-town-evacuees> (March 21, 2010).
- Perry, Ronald and E.L. Quarantelli (eds.). 2005. *What is a disaster?*. United States of America: International Research Committee on Disasters.
- Ritzer, George. 1996. *Sociological Theory*. New York: McGraw-Hill Companies.

Tandoc, Edson C. and Katherine Evangelista. 2009. "Floods submerge Metro Manila areas As Typhoon Ondoy batters Luzon." <http://newsinfo.inquirer.net/breakingnews/nation/view/20090926-227047/Floods-submerge-Metro-Manila-areas> (March 21, 2010).

Uy, Jocelyn. 2009. "Ondoy death toll climbs to 280." <http://newsinfo.inquirer.net/breakingnews/nation/view/20091001-227890/Ondoy-death-toll-climbs-to-280> (March 21, 2010).

_____. 2009. "EU gives another P490M to Ondoy-Pepeng victims." <http://globalnation.inquirer.net/news/breakingnews/view/20091122-237718/EU-gives-another-P490M-to-Ondoy-Pepeng-victims> (March 21, 2010).

New Trends in the Planning and Maintenance of Countryside Scenery in Japan

Hiroyuki Torigoe

Waseda University, Tokyo, Japan
torigoe@wasea.jp

Abstract

Drawing on Japanese examples, this paper clarifies the issues pertaining to the planning of “beautiful scenery” in the countryside. In contrast to urban areas, the countryside is usually characterized by natural beauty and calm vista. The desire of large number of city dwellers to visit the countryside or rural areas for leisure is, in part, explained by these pleasant features. Recent changes in rural areas through modernization and increased tourism have, however, had an adverse impact on their bucolic scenery. Modernization, which has rather long history and continues its relentless development, has drastically altered country life. Sightseeing tourist spots, which have recently gained popularity with the cooperation of rural dwellers, have supplemented the income of farmers, who, in recent times, have faced falling market prices for agricultural goods.

Clearly, modernization and sightseeing tour are contradictory phenomena, since the former often alters the very traditional rural scenery that prompts the latter. This paper does not simply focus on the opposition; instead, it critically analyzes new trends in the maintenance of rural life, occasioned by both modernization and the “Disneyfication” of tourism.

Keywords: planning, tourism, modernization, countryside

Recent Trends in Modernization

Modern improvements have destroyed many of the charms of rural scenery, a development not welcomed by tourists. However, modernization has offered rural dwellers more comfortable and productive lives. In addition, an environment-friendly modernization, which integrates contemporary social concerns, has become an alternative.

Roughly speaking, environment-friendly modernization is an acceptable approach to rural beautification. Figure 1 offers an example of this concept. It shows the use of “advanced technology” in the field of river improvement, wherein the created river strives to preserve the forms of nature by following the dictates of the neo-natural river reconstruction method. A river is usually not straight but rather curved. Thus, a bare concrete river bank is far from that of a natural river, which is sinuous and defined by punctuated outcroppings and beautiful natural grasses. The rough texture and plantings along the borders of the constructed river could also be seen in Figure 1. These are the fruits of the neo-natural river reconstruction method. This is an important point—that the curves the river are identical, a regularity that is physically impossible in a natural river.



Figure 1. River improvement using “advanced technology”

One may accept some elements of the depicted project, such as the lumps of grass in the modified environment-friendly, and still not find the whole satisfying. Thus, I adopt a holistic approach, which I found to be indispensable in evaluating scenery, even when an elementalistic one reveals technical proficiency. The rhythmical curve and the face blocks of the fashioned river are too artificial to be considered an environment-friendly sight. Given this observation, the next step is to probe why such an artificial environment-friendly scene is a product of the modernization process. Nowadays, such sites can be commonly found in the world, thus, reflecting heightened environmental awareness. Some are acceptable, however, the unusual, far from natural settings typified in Figure 1 must be explained. These will be discussed from two viewpoints: that of the government and that of the community.

Using the case of a river, I will begin by discussing the government’s role. In Japan, a branch of the national government called—the Road Bureau, Ministry of Land, Infrastructure and Transportation and Tourism (MILT) takes charge of river improvement works. The MILT changed its strategy from so-called effective rational public construction to environment-friendly works in 1997, following long disputes between local populations and administrative offices around the country over “environmental rights.”

In the past few hundred years, river improvement projects have aimed at controlling floods, which have, in the past and even recently, resulted in extensive human and material losses. Therefore, public works aimed at eliminating such disasters are legitimate function of the government. However, over the past few decades, people and the mass media have begun to point out wasteful spending of the state budget, which has been devoted to ineffective or unnecessary river improvement schemes. Responding to such criticism, the state has opted for a “desirable solution,” the neo-natural river reconstructed method. This technique is more expensive than traditional river improvement, - thus necessitating that large budgets be maintained by the central and local governments. This technique embraces the notion of an environment-friendly

society. With regard to the members of local communities, modernization affects not only the material objects of their intangible ones, such as their mores, beliefs, ideas, and ideals. We should appreciate the conveniences that modernization has brought to the daily lives of rural communities. However, we must also take note that some elements of this improvement are simply replications of those found in urban areas. The process is not entirely problematic, but it contains features that are certainly not appropriate for rural settings. Typical of these poorly adopted aspects is the employment of large sum of capital to purchase arable flatlands and hilly zones in order to generate profits through “land development” for estate housing. This pattern is very similar to that of industrialized countries, such as the United States of America and Japan, in the years 1890-1920, during which many farmers had lost their lands and were compelled to leave their villages (Wilson, 1912, pp1-21). Ironically, in this period, which witnessed one of the severe crises in the countryside, rural sociology prospered and advanced theoretically. A century later, a similar situation has appeared, one that now concerns not the poverty of farmers but that of sceneries. While the natural impoverishment is usually the handiwork of private companies, public sectors sometimes contribute to this initiative.



Figure 2. A hill with a Mohican head.

Ichijiyoyama Hill in Kyoto provides one of the best examples to analyze the issues that threaten the scenery. The countryside around the area of Ichijiyoyama Hill has recently been changed by a real estate developer, its proprietor, into a residential area to accommodate the expansion of the Kyoto urban area. Figure 2, depicts a hill, whose naturally round, vegetation-covered shape has been transformed into a Mohican-like hair cut. This anti-Mohican movement to recover the hill's former contour. In this case, the residents relied on their so-called environmental rights as the basis for their arguments. These “environmental rights,” a rather new term, began to be used the beginning of the 1970s in several countries, including Japan (Matsumoto, 1982, pp1-5). In Japan, it is understood that a right that does not emerge from positive laws, such as those governing civil and criminal cases, but mainly from tradition. Thus, if residents make legal claims on the basis of their environmental rights, the course will respond negatively. Environmental law, thus, seeks to deny the absolute claims of private

ownership, which have a strong foundation in the positive laws of Japan, a capitalist nation. However, residents have no other suitable logic but that of environmental rights, which stems from tradition.

What action should be taken to protect the community's environment using "environmental rights" since these are not part of codified law? Only the establishment or renewal of community rule by the residents in cooperation with the local administration is effective. Sociologists possess the knowledge and experience to aid residents in developing such local power. They suggest that the key is to grant more decision-making authority to community members. Furthermore, sociologists point out that traditional local rules and privileges are useful in protecting the environment and natural beauty during the modernization process, even when compared to modern national laws. In short, it is important to enhance "environmental rights" as a part of community law.

The Current State of Sightseeing Tours and Future Possibilities

Kyoto, where Ichiyoyama Hill is located, is a popular destination for tourists, who increasingly find "too much modernization" everywhere. Thus, it is necessary to address such concerns through the community. Community rule, if determined, certainly works well as a breakwater for misguided natural modification. In communities where such rule has been weakened through modernization, community disorganization is often found. In such cases, we must reorganize and strengthen the community before imposing its rule.

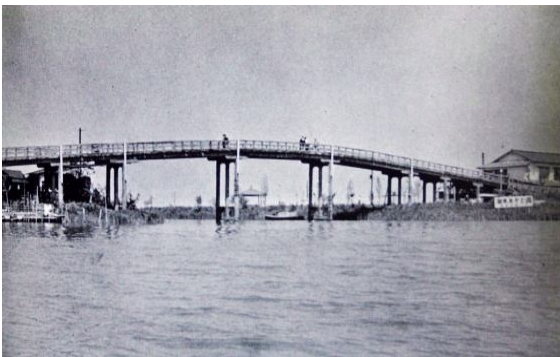


Figure 3. A traditional bridge.



Figure 4. Changed into straight concrete lines.

In order to illustrate the necessity of strengthening the community, will take up an example of Itako in the vicinity of Lake Kasumigaura, which has become an unattractive sightseeing spot because of "too much modernization." Figure 3 shows a traditional bridge that spanned the river flowing into the lake and which was demolished during the process of modernization, and the two shores that were changed into straight concrete lines (Figure 4). Tour boats moor there, but since the charm of the place diminished, fewer tourists now visit it.



Figure 5. A daughter of a boatman.



Figure 6. “Daughter” changed to senior women.

Figure 5 is a photograph taken in Itako around a half century ago. The images that are synonymous to Itako, - that of a “Riverside district” and the “Daughter of a Boatman”, - are valued by tourists. However, the rivers and streams of “Riverside district” had now been transformed into concrete rivers and streams, and the “Daughter or a Boatman” is nowhere to be found. Now, however, women do piece of work for farmers (Figure 6). How can this situation be improved? First, as indicated in Figure 7, the concrete wall is being occluded by wooden logs. Moreover, the planting of flowers in old boats on the riverbank (Figure 8) diverts the tourists’ attention from the concrete to the flowers and quaint boats. Moreover, a “true” daughter of a boatman began to appear as a volunteer in cooperation with the local junior chamber of commerce (Figure 9). Such efforts have prevented the decline of sightseeing in Itako. They have also enhanced the desire of local people to strengthen their community.



Figure 7. Occluded by woodenlog.



Figure 8. Planting of flowers in old boats.



Figure 9. Reappearing of a daughter of a boatman by a volunteer.

The efforts that an individual can devote are limited. However, a powerful community not only opens the possibility of making environmental demands to the administration, but also presents the opportunity to propose counter measures to new river planning, both of which originate from residents, including the farmers and fishermen who know the river well and who have an interest in environment-friendly ideas.

Summary

When thinking about the enhancement of village life, it must be admitted that modernization is important. It is necessary, however, to note that there are two problems with modernization. First, the government's efforts toward environment-friendly modernization often result in works that are too artificial and too unnatural, as shown by the example of the river. Second, real estate enterprises often engage in environmental destruction. It is necessary to address these two problems. Communities must be strengthened and reorganized. It is important to recognize that old customs or mores are effective means to protect the environment and rural vista. By doing so, environmental rights will operate effectively. Moreover, after reorganizing community laws, strengthening of its power becomes indispensable. In response to "too much modernization," as shown in the example of Itako, the community tends to augment its powers. Since its residents are the ones who are most familiar with the modification of the local environment, it is necessary that residents gain a greater voice than the local governments and developers.

Reference

Matsumoto, Shoetsu., 1983. “Studies on the Environmental Right”, Nagoya: Tsukyo Hogaku, 18.

Wilson, Warren H. 1912, the Evolution of the Country, Boston: The Pilgrim Press

Changes in the Purpose of Organic Farming and the Roles of Newly-Involved Farmers in Japan

Koichi Ikegami

Faculty of Agriculture, Kinki University

ikegami@nara.kindai.ac.jp

Abstract

Organic agriculture is getting more and more attractive to concerned people worldwide. In particular, the community-supported agriculture (CSA) in USA and AMAP in France are expanding rapidly. Both movements are very similar to the “Teikei” system, which is a close and direct partnership between producers and consumers in Japan.

This paper first examines the changes in the Japanese organic agriculture characterized by “Teikei” system. Although it is believed that organic agriculture in Japan has been led by consumers concerned about food safety, it has other important driving forces. One is medical improvement movement in rural areas, which aimed at protecting farmers from the harmful effects of the agro-chemicals. Another force is the farmers’ will to alter modern agro-technology because of lost soil fertility through degradation of the field ecosystem. Currently, the major purpose of organic agriculture has turned into the acquisition of economic added value.

The second aim of this paper is to analyze the role of new farmers who initiated organic farming even though they were not born in agricultural households (hereinafter referred as new organic farmers). This analysis is based on a case study of Ichijima Town, now the Tanba City in Hyogo Prefecture, one of the leading areas in Japanese organic agriculture movement. Moreover, there are a few newly-involved organic farmers in Ichijima.

This paper concludes that the Japanese organic agriculture has been losing on two important aspects: medical improvement for farmers and alternative farming technology. Especially, organic farming technology is considered as an individual art which is not suitable for academic research. In addition, new organic farmers in Ichijima are adopting some scientific methods not only for farmers themselves but also for getting consumers’ satisfaction. Finally, it is important for sustaining organic agriculture to build close partnership between the local government and producers as well as consumers-to-producers relationship.

Keywords: Organic agriculture, CSA, ‘TEIKEI’, Newly involved farmer, Ichijima Town

Purposes and Methods

This paper has two purposes. The first one is to reaffirm the characteristics of Japanese organic agriculture in the early days of modern organic agriculture and consider how they have changed during the “development” of organic agriculture. The second one is to investigate what prompts I-turn-type (migration normally from urban areas to local areas) new entries, which are very important from the viewpoint of the players involved in organic agriculture.

Japanese organic agriculture had to take the form of “Teikei” due to various reasons during the early days of its development. “Teikei” refers to the direct transaction between consumers and producers without passing through a market. Despite the fact that the organic agriculture market has expanded in Japan, it is often assessed that the “Teikei” is in a stagnant condition, as a whole. However, if you look around the world, CSA1 of North America and AMAP of France, both of which are said to have originated from “Teikei”, have greatly developed. Therefore, this paper reaffirms its significance and finds a path for new possibilities, by returning to the starting point.

The trends in organic agriculture were investigated from the viewpoint of identifying its driving force. After the current condition of organic agriculture in Ichijima, Hyogo Prefecture was outlined, the conditions of new entries into organic agriculture were investigated through interviews with two I-turn organic farmers. Ichijima area is one of the pioneers in organizing a systematic “Teikei” in the early days of Japanese organic agriculture, and it is also the area where I-turn organic farmers have been actively working from the very beginning and comparatively more I-turn organic farmers are there. Therefore, it can be said that Ichijima is the optimum case to clarify what are the conditions needed to promote I-turn-type new entries into organic agriculture.

Birth of the Organic Agriculture Movement in Japan

The deployment process of organic agriculture in Japan can be largely classified into four stages. The first stage is the beginning of organic agriculture from the 1970s to the early 1980s, the second stage is from the middle of the 1980s when the distribution of organic agricultural products became diversified to 1992 when the guidelines for product labeling system was introduced; the third stage is in the 1990s when organic agricultural products gained a significant presence in the market. Lastly, the fourth stage is in the 2000s when product certification and labeling became more precise and strict. Then, what was the driving force of the organic agricultural movement for each period? Let's look at two periods from the first stage and the present stage for comparison.

When talking about the history of organic agriculture, we often start from the establishment of the Japan Organic Agriculture Association (JOAA) in 1971. However, it goes without saying that various efforts had been performed before it was established, and these efforts included a wide range of activities, not only consumer movements

¹ E. Henderson, 2007

demanding for food safety, but also farmer movements questioning farming methods and rural medicine movements aimed at improving the health of farmers. This is indicated by the fact that various persons including corporatist Teruo Ichiraku, natural farming practitioner Masanobu Fukuoka, Toshikazu Wakatsuki, a leader in agricultural medicine, and Dr. Giryo Yanase, who tackled the problems of agricultural chemicals, came together through JOAA.

The driving force of modern organic agriculture has converged to the characteristics as commodity with added value, or to the environment-friendly produce with low environmental burden. The former is required for the retail shops such as agricultural cooperative and mass retailers to sell organic products, and the latter reflects the government's position on organic agriculture, as is well explained in the Law on Promotion of Organic Agriculture enacted in 2006.

In short, the momentum of organic agriculture in the early days could be seen as the joint force of three aspects of consumer movements, change in farming methods and the rural medicine movement, but afterwards, its development has been simplified to either the economy or environment (Figure 1).

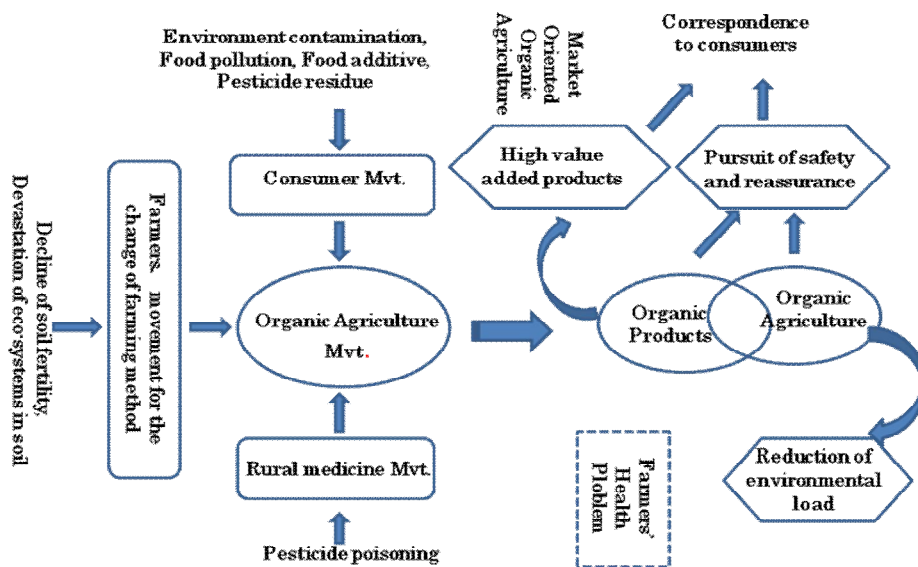


Figure 1. Change of momentum in the organic agriculture movement (Ikegami, 2010).

Ideal Type of “Teikei” and Fundamental Problems Lurking Behind it

In the early days, organic farmers employed a method called “teikei” which consisted of three parts of production, consumption and cooperation between them as shown in Figure 2. A more detailed explanation is as follows:

- The organic farmers collected products from their group on a determined delivery date and delivered them to their consumer groups. They bore all labor and collection and delivery expenses.
- Consumers came to a delivery site at a pre-determined time and day, sorted the products and brought them home. They performed the jobs of sorting out products and calculating individual payments themselves.
- The prices were determined by discussing whether or not they could cover the organic farmers’ production costs with average market prices being taken into consideration. These prices were determined from the viewpoint of supporting farmers’ livelihood. Therefore, all were encouraged to adopt the principle of purchasing all products that were produced and the fixed price system with which business planning could be easily implemented.

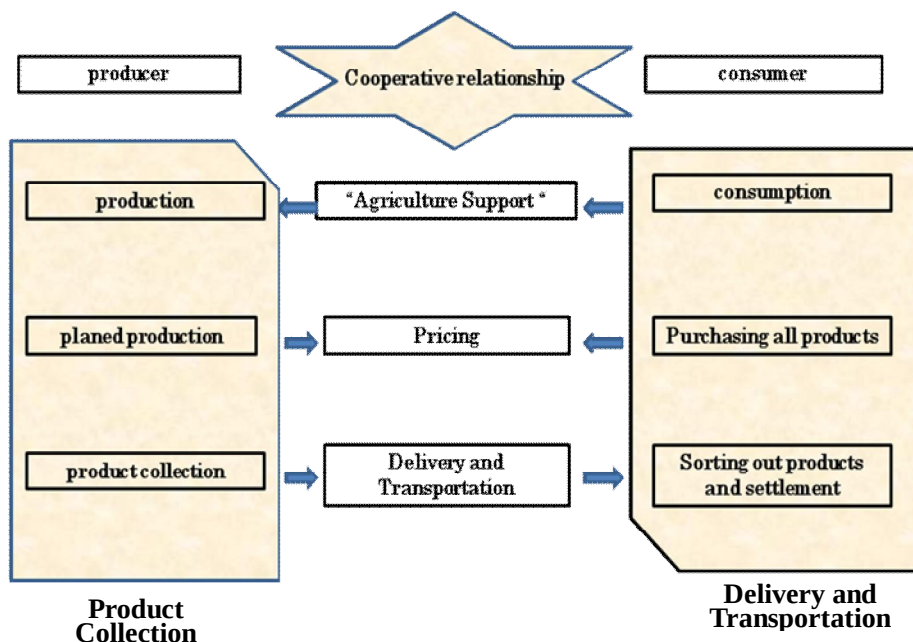


Figure 2. Various fundamental aspects of “Teikei” (Ikegami, 2010).

- The production of organic products was performed by mixed cropping, the production of many items in small amounts. This production system was indispensable in order to meet the consumers' requirements and minimize disease and insect damage.
- An agriculture support project where consumers worked together with organic farmers in their field was recommended. However, the true purpose of this project was to promote the mutual understanding between consumers and organic farmers.

The fundamental characteristics as mentioned above are reflected in the "Ten Clauses for Teikei"² that the JOAA summarized in 1978. These ten clauses show the responsibilities of producers and consumers and the persistent approaches between each other. In other words, they show a fundamental ethic concerning the relationship between consumers and producers.

However, the "Teikei" organic agriculture entered a stagnant and declining period after the peak in the early 1980s, because of a decrease in consumer members in "Teikei" groups, delayed generation change of members and a decrease in purchasing amounts. What are the fundamental reasons? First, the existence of power politics in "Teikei" has been downgraded. At the beginning, it was often the case that consumers asked farmers to produce and supply organic products. Consequently, the consumers felt a sort of indebtedness to the farmers and, as a result, a primacy of organic farmers over consumers, such as the principle of purchasing all products, was institutionalized. However, at the same time, because the principle of equality and mutual benefit was over emphasized, the actual power relationship was eventually not recognized. As a result, attention was paid only to maintain the conventional framework while the change in the power relationship between consumers and organic farmers was not recognized along with the diversification in distribution of organic products.

Second, along with the increased awareness of organic agriculture, the understanding that organic products are highly value-added products had spread. The reason for high value is the "safety" of organic products. If it is so, then the "safety" will be transformed from a fundamental property of food to a condition to determine the economic value as commodities. This connects to the contemporary character that emphasizes only economic incentive, eliminating various momentums that organic agriculture has.

² The website of the Japan Organic Agriculture Association carries the translation of the "Ten Clauses for Teikei".
URL: (<http://www.joaa.net/english/index-eng.htm>)

Present situation of Organic Farms That Initiated the Practice in Ichijima, Hyogo Prefecture

Establishment and present situation of organic agriculture in Ichijima

In Ichijima, farmers responded to the call of Mr. Tadashi Kondo of Ainokai³, and started working on organic agriculture. In particular, a pesticide poisoning accident that Mr. Sakuro Isshiki, the first representative of the Ichijima Organic Agriculture Association, experienced boosted this transformation of farming methods. In 1975 when organic agriculture spread to some extent, the Hyogo-ken Organic Agriculture Association, established in November 1973, held a community meeting in Ichijima, which was participated by a consumer group. “The Group to Ban Polluted Food and to Demand Safe Food” in Hyogo, established in April 1974, (hereafter referred to as “Demanding Group”) required that organic farmers of Ichijima become “Teikei” partners. As a result, the Ichijima Organic Agriculture Association was established.

As the circumstances during this period show, the organic agriculture of Ichijima was a typical case where the three momentums of consumer movement, changing farming methods and the farmers’ health assurance movement (rural medicine) were combined together and produced “Teikei”. In addition, the principle that the organic products would be sold within Hyogo Prefecture as much as possible was established.

However, the members in the Ichijima Organic Agriculture Association decreased from 35, at its peak, to 27 in 1990 and to 5 as of 2010. This was caused by the retirement of the first generation that had led the “Teikei” in the early days and the disintegration of the association as a result of the response to the problem of the development of a golf course in Ichijima. The number of members in the “Demanding Group,” the main “Teikei” partner, greatly decreased to around 300 at present from more than 1,300 at its peak.

From this fact, it looks as if the “Teikei” of Ichijima is under stagnant conditions. However, there are approximately 30 organic farmers in Ichijima, which is not very much different from the number that existed in early days. Moreover, 17 more than half of them, are new entrants. This is a very rare case nationwide.

The organic farmers split up into the following groups, “Tanba Minorino-Kai”, “Yukinosato Committee”, “Society for Prevailing Organic Products” and “Organic Rice Committee”, in addition to the Ichijima Organic Agriculture Association. It doesn’t mean that these groups are performing integrated operations among themselves; these groups deal with the shipment of products to the same delivering addresses. They are expanding their sales to other outlets as well by their own sales activities.

³ Ainokai, a corporate juridical person, was established by Junnichi Kotani in 1945 where the farmers get together who are moved to the idea of promoting the development of village by peace, love and cooperation of human society.

Fundamental concepts of the newly-involved organic farmers

This section will explore fundamental concepts of two organic farmers, Mr. A in his late 40s and Mr. B in his early 30s.

Mr. A is a trailblazing force for the organic farmers who I-turned to Ichijima. At present, he is growing approximately 40 items of vegetables on a rotational basis in a 0.1 hectare paddy field and a 0.7 hectare farming field. He is also keeping approximately 400 hens for eggs on the ground. He ships the products to the Ichijima Organic Agriculture Association, and from there, these products are delivered to the customers in the “Demanding Group”, “Group 90” and “Co-op Tsudoino Kai”.

Mr. A’s fundamental concept of organic agriculture is based on the Oriental Holism in the wake of Masanobu Fukuoka and Gandhi. In this respect, it can be said that he belongs to the first generation that put more stress on the principles of the organic agricultural movement, but, he emphasizes the importance of scientific organic agriculture as well. In 2004, when bird flu occurred in Tanba Town, Kyoto, the nearby areas where egg farming flourished, suffered serious damage. Even if he insists that the product is safe from bird flu, consumers would not trust him if it is not supported by scientific evidence. Organic agriculture that only relies upon experience and intuition cannot prevail and it is difficult to gain consumers’ support. He insists that, instead of mystifying them with oriental understanding, it is important to tie it with agriculturists and accumulate scientific data himself.

As a part of this process, he is analyzing eight kinds of minerals using soil analysis software, “Doctor Soil”, from which the relationships between such things as yield amount, occurrence of disease and insect damage can be analyzed. He is trying as much as possible to scientifically determine the technical system for organic agriculture. If this method spreads in the whole of Ichijima, even new organic farmers who have no experience in agriculture could understand organic agriculture as technical system, and the farmers in the area who are reducing the use of pesticide can understand it and may convert to organic agriculture. He hopes to increase organic farming by transferring organic agriculture to a scientific basis.

We will now discuss Mr. B’s fundamental concept towards organic agriculture. He moved to Ichijima in 2000 and started organic farming. He was trained by Mr. A. During the year and half training period, he survived with a subsidy from the New Entry Farming Foundation of IFOAM and a gratuity from Mr. A who accepted the trainee, the sum of which was sixty thousand yen per month and the sale of his products from his farm that he started during the training period.

“Demanding Group” had no room to accept the products from new organic farmers, so he had to find new “Teikei” customers. He started with four families in the neighborhood of his family home, and he gradually expanded his customers. At present, Mr. B has established his sales system, such as selling his “farmer’s best assortment of vegetables” as his own brand to his 50 “Teikei” customers.

When he got involved with the group, Mr. B leased a 0.3 hectare farming field. At present, he is growing 40-50 kinds of vegetables in a 70 acre area in a total of five places, including the lands that he newly purchased. As he is aiming to constantly have about eight kinds of vegetables in the “farmer’s best assortment of vegetables”, it is necessary to produce multiple products. The price is ¥2,000-2,500 per pack.

The growth of multiple products is based on the idea to “make a small ecological system in the farming field”. This idea can be said to mean the rearrangement of farming methods, which is related to the motivation of new entry farmers as well. What can be drawn from this is not only a negative-type organic agriculture which only advocates that it does not use pesticide or chemical fertilizer, but a clear meaning of agriculture dependent upon the ecological system. This point is very important, because research on organic farming system has gradually slipped away. His fundamental concept is to deliver his products together with the seasonal landscape of the farming field to the consumers’ families⁴. This romantic ideal is considered to be a characteristic of the 2nd generation of strongly nature-oriented organic farmers.

Conditions for promoting new entries

Based on the experiences and opinions of Mr. A and M. B, the factors influencing the newly-involved organic farmers to come to Ichijima are as follows:

- The efforts have been made to discuss conventional organic agriculture with scientific agriculture and to sustain it as well. Organic agriculture of the first generation of farmers that relied on the experience and intuition is difficult for consumers to support. The new entrants had also difficulty in learning this method as they can attain the skill only through the training like apprenticeship for long time. However, the data accumulated by scientific organic agriculture can be used as universal standards, so that new entrants can easily relate to their jobs. New challenge is to show the identity of each area not as principles but as figures for future purpose, and organize a new certification and labeling system in order to introduce the optimum standard for each area.
- The system to support training was introduced with the cooperation of local government from a comparatively early time. At present, a model town project, based on the Law on Promotion of Organic Agriculture, is being implemented in Ichijima, and a considerably advanced training system has been organized.
- It is difficult to get housing and a farming field at once in the Japanese rural areas. Therefore, temporary dwelling or inexpensive accommodation, where the trainee can live long term during the training period is necessary. “Ichijima Tanba Taro”, a Non Profit Organization, plays an important role in this respect. It also plays a role in covering their living expenses by providing side job opportunities, such as a truck driver for delivery service.

⁴ “Food and Agriculture Supported by Community” Kobe University Annual Meeting Organizing Committee (2010)

- New entrants have to make efforts to find new customers themselves. However, there are many senior farmers from whom new entry organic farmers in Ichijima can easily collect information. The name of Ichijima is accepted by consumers within Hyogo Prefecture as a territory brand, so it is also a merit that new entrants can be easily trusted. Furthermore, the feeling of security that comes from there being many peers eliminates the feeling of isolation, and this provides very precious emotional support.

References

- Hashimoto Shinji, 2009, Ichijima where Consumers and Producers Went together, 30 Years of Organic Agriculture, Organic Agriculture at a tipping point (Agriculture and Economy Extra Edition), in Japanese
- Harayama Kosuke, 2008, Organic Agriculture as a History of Loss, in Koichi Ikegami, Masaya Iwasaki, Kosuke Harayama and Tatsunori Fujihara, Communities of Food, the Past and the Present, Nakanishiya shuppan, in Japanese
- Henderson H., 2007, Sharing the Harvest, Revised and Expanded. A Citizen's Guide to Community Supported Agriculture, Chelsea Green Publishing
- Kiichi Nakajima, 2009, Meaning of the establishment of the Law on Promotion of Organic Agriculture and Policy Issues in the future, Organic Agriculture at a tipping point (Agriculture and Economy Extra Edition), in Japanese
- 'Food and Agriculture Organization, 2010, Food and Agriculture Supported by Community, Kobe Meeting Feb. 2010 Report, in Japanese
- Nakajima, Klich, 2009, Meaning of the Establishment of the Law on Promotion of Organic Agriculture and Policy Issues in the Future, Organic Agriculture at a tipping point (Agriculture and Economy Extra Edition), in Japanese

The Development of Farmer-Consumer Direct Relationships in Japan: Focusing on the Trade of Organic Produce

Motoki Akitsu and Namie Aminaka

Graduate School of Agriculture, Kyoto University, Japan

akitsu`kais.kyoto-u.ac.jp

aminaka`nok.mbox.media.kyoto-u.ac.jp

Abstract

Many people have become concerned about food safety due to the spread of agricultural chemicals, the introduction of bio-technologies, and the expansion of cross border food trade. Consumers who have become aware of these circumstances have sought for safer produce in two ways: certification of safe produce by authorities or obtaining produce directly from farmers whom they trust. We concentrate on the latter method in order to explore the human relations created and continued by food provision. The distribution system within organic agriculture is an excellent pioneering example of the formation of a direct relationship between farmers and consumers. Because there was no authorized certification system in the initial stages of organic agriculture, the only way of certifying the safety of produce for consumers was to get them directly from organic farmers. Verified by previous study, there are three types of relationships among farmers and consumers depending on whether they are organized or not, namely: organized farmers - organized consumers (OF-OC), non-organized farmers-organized consumers (NF-OC), and non-organized farmers-non-organized consumers (NF-NC). The Community Supported Agriculture (CSA), which has prospered in US, seems to include some cases of OF-NC, but the type is seldom seen in Japan. We present several cases classified as OF-OC and NF-NC and investigate the history of their relationships. We would point out, as one of our conclusions, that personal contact and/or experience of the counterpart's situation becomes more important for binding farmers and consumers than any ideal/ethical concept that was predominant in the early stage.

Introduction

Food safety is one of the most pressing concerns not only in developed countries but also in semi-developed countries. There are various reasons for this concern, but the globalization of economics is the most basic backdrop in creating many of these reasons. The more economies are globalized, the more food is being traded across borders. There are so many intermediaries between producers, that is, farmers and consumers in the case of imported foods that end users cannot begin to imagine the actual origin of the foods they eat and are not apt to rely upon the intermediaries assurances of food safety.

Another reason why food safety is of concern is an increasing consciousness and awareness of one's own health and environment. Modern foods may contain various kinds of artificial ingredients, such as additives, and chemical residues are sometimes detected on produce. The amount of chemicals in each foodstuff is very little but they

might be harmful to health when they accumulate for a long period. Advanced food-related technologies have also become causes of anxiety and actual harm to human health. BSE (bovine spongiform encephalopathy) and GMOs (genetically modified organisms) are suspicious examples.

Concerned about the health of the environment is not directly related to human health, but the health of ecosystems does influence our health in an indirect, holistic sense. Excessive use of chemicals pollutes the environment and increases the risk for polluted foods. Another example is GMOs, which cause apprehension about gene pollution in ecosystems. Consumers, mainly in Western Europe, are increasingly interested in the ethical treatment of domestic animals. This interest is related to mental human health.

There are two ways to get reliable produce. One way is to buy from sources authorized by a formal certification system. For example, organic produce, most notably, can receive certification from IFOAM accredited certification bodies. Apart from organic certification, governmental, non-governmental, national, and local bodies are promoting various systems of certification to gain consumer confidence in their produce. The other way to procure reliable produce is for consumers to form direct relationships with farmers, which is the component we focus on deeply in this study.

Farmer-Consumer Relationship (FCR)

Social Relationships Based on Food

Food generates various kinds of social relationships. The most familiar relationship that food creates is eating together on a table. Eating together is a primary form of communication in our life, especially in our family life. Eating is so essential that it may provide the basic structure of the small community. A social anthropologist has proven that the grouping that occurs from eating together, that is, the grouping associated with consumption, plays a more basic role than the grouping associated with production in an ethnic group in Congo (Sugimura 2004). Inevitably, securing food through redistribution among the group is crucial for the survival of a community.

Food also creates relationship between farmers and consumers. When a community provides all of the commodities it needs, there is no need to make a special relationship between farmers and consumers. When people produce the foods they need, they are both farmer and consumer, and do not need to create a special relationship between them. Such self-sufficiency, however, has vanished in most modern societies and the majority of farmers have left farming to pursue other work. Those who have quit farming, and their descendants, have to get fresh food from farmers in some way or another. They have to make a kind of farmer-consumer relationship (FCR) for their survival. For most people living in cities, fresh food is found at a local market, a grocery store, or supermarket. In these cases, there are intermediaries between farmers and consumers, such as traders, wholesalers, retailers etc. This indirect FCR prevails among most people who live in cities. This indirect FCR system is efficient because it can distribute a large quantity of food from the place of production to consumption. This

system is inevitable nowadays, as a large portion of people live in cities far from the place of production.

In spite of the predominance of indirect FCRs, instances of direct FCRs are growing, especially in developed countries. Direct sales, CSAs and TEIKEI partnerships (farmer-consumer association in Japan) are examples of this movement. As interest in food safety is increasing, consumers look for more direct ways to get food, because the many intermediaries that exist within the distribution system make it difficult for consumers to identify how the food has been produced.

Direct FCRs are not only required from a food safety standpoint, but are also recognized as an alternative way to look at food security issues. The concept of community food security (CFS) “is a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice” (CFSC homepage). The CFS movement started in 1992 and their goal is to help urban people, who may be unable to access healthy, safe food, and help recreate a system of family farmers, who have suffered from agricultural modernization that has resulted in the expansion of farm size, pushing many off the land and decreasing food security. The CFS is working as one of the intermediaries that try to connect small-scale farmers and consumers. The CFS Coalition focuses on three primary areas of work: training and technical assistance, project work, and policy advocacy and is organizing at local, state, and federal levels (Allen 2004, p.48).

Food can create the above mentioned unique connections between farmers and consumers because it has special characteristics that are indispensable for human life. However, in a society where the exchange of goods predominates, food simply becomes just another commodity. Consumers have the right to choose food that they prefer. The criteria of choosing food might be taste, nutrition, safety, or price. Price is the only information we can obtain accurately. We cannot get precise information about taste, nutrition, or safety for food from its appearance alone or even its price. Though we can judge food's taste after eating it, we cannot judge the nutritional value or its safety just from eating. In other words, it is difficult to realize the use value from the appearance of food. Even though the amount of chemical residue on a piece of produce may be miniscule, we cannot detect toxic materials by appearances alone. Now that we have lost, or gone beyond, our instinct for what we should or should not eat, we need additional information other than that derived from price and appearance alone.

Trust: The Element Supporting FCR

Even if FCRs are close, it is still difficult for consumers to get precise information about produce. Consumers cannot follow farmers around their fields all the time in order to see what farmers do in cultivating the produce they offer for sale. Direct inspection may reduce uncertainty, but is costly. For consumers, trust plays an essential role in reducing uncertainty. When consumers trust farmers completely, consumers can secure something expected without any concrete certification. Trust is one of the key ideas in analyzing modernity in contemporary societies. Many leading sociological theorists

have referred to this concept to explain the transformation of solidarity in modern societies, N. Luhmann being the most prominent. He has devoted himself to elaborating this concept fairly early in his academic career in 1968 (Luhmann 1979=1973). He conceptualized trust as a specific medium in modern societies, which works like money. Trust served as a device to explain the reduction of complexity prevailing in modern societies.

According to Luhmann's arguments, there are two kinds of trust: system trust and personal trust. Using the example of money as a medium of reduction, he says "anyone who trusts in the stability of the value of money, basically assumes that a system is functioning and places his trust in that function, not in people" (Luhmann 1979=1973: 50). System trust has been expanding during the modernization of societies. There are a lot of systems working in the world of food now. The most rigid one is a system of law. There are regulations dictating the use of agricultural chemicals during the production stage, and regulations for hygienic standards during processing, distribution, and serving food. To inspect the cause and origin of food accidents, many societies are introducing a tracer system based on formal regulation. The food distribution system itself is another construct we trust. The reason why we do not feel anxious lest we should find nothing to eat in shops is supported by our trust in the distribution system. Besides, recent development in the system has to do with the certification of the body that inspects the process of food production. It mostly certifies a specific method of food production, such as a traditional way of processing, ethical treatment of farm animals, organic ways of farming, etc.

On the other hand, personal trust "is based on personal relationships, whereas system trust tends to be based on factual and technical expertise, e.g. on internal rules or control mechanisms of the system" (Coff 2006: 146). Personal trust is the precedent to system trust. Luhmann argued the development process of trust clearly. After discussing personal trust, he continued to write "there is no doubt that modern differentiated social orders are much too complex for the social trust essential to ordinary living to be created solely by this type of orientation towards persons" (Luhmann 1979=1973: 46). Personal trust is derived from good personality or one's virtue.

A British sociological theorist, A. Giddens has a little different idea about the Luhmann's idea of trust. He asserts the same transformation of trust in modern societies. He explains the transformation from "trust in persons" which involves "facework commitments" to "trust in abstract systems" which takes the form of "faceless commitments" (Giddens: 1990, 88). Moreover, he argues that "the nature of modern institutions is deeply bound up with the mechanism of trust in abstract systems, especially trust in expert systems" (Giddens: 1990, 83). However, he does not conclude the discussion with the disappearance of personal trust. Personal trust will continue not in the previous form, but in a transformed one. The personal trust transformed in modern societies is named "basic trust" (ibid. 124), which is one of the elements that his well-known concept "the transformation of intimacy" includes.

Food and Personal Trust

The above studies indicate that personal trust as a social element of integration is becoming limited in modern societies. Unless food is an exception to this tendency, we should ignore personal trust and concentrate on system trust in order to design the future form of FCRs. In the globalization of food trade, the standardization of food is progressing over the world rapidly (Bingen & Busch 2006). Plenty of regulations and certifications related to system trust are being introduced everywhere and in association with every kind of food. What is the significance of personal trust in the current realm of system trust for food?

Christian Coff who conducts a crosscutting research on philosophy, ethics, agricultural science, food production and consumption in Denmark, picked up on this question of personal trust and system trust when considering the ethics of food tracing. He concluded that “on the food market, personal and system trust go together,” because “these are not independent of each other, and in the case of food it is clear that system trust, or distrust, can be enhanced by personal contact with representatives of the food production companies” (Coff: 2006, 147). He does not think that personal trust is destined to disappear in the realm of food at least, though he takes into account almost nothing about various ways of direct FCR, which are based mostly on personal trust and prevail in the contemporary world.

The role of personal trust is much easier to understand in direct FCRs. We can assure the safety of agricultural products, when farmers whom we know and whose personality we know is good enough to produce them. If we trust a certain farmer as a good person, we can trust what he does and what he produces. As I already mentioned, food is a special ‘commodity,’ that is, not a mere commodity but an essential material that maintains our human life. We would like to consider food as an exception to the trend of increasing system trust. The movement of local food consumption may encourage nurturing personal trust because if the distance of farmers and consumers becomes closer, the chance to know each other increases, and personal relationships more often becomes a source of trust upon which consumers can rely.

Organic Farming: Pioneering Direct FCRs

Organic farming has served as a pioneer in the making of an alternative channel between farmers and consumers: direct FCRs. Organic farming has developed unique systems of distribution. CSAs, which are spreading rapidly and extensively over the U.S. and out even beyond national borders, is the most famous system that exists now. The system has been around since the 1980s and originated from movements in Switzerland, Germany, and Japan. The advertisements of each CSA on the Local Harvest website prove that all CSA farms do not seem to adopt organic production methods. Other than “organic,” “sustainable,” or “chemical free” in their farming methods, the advertisements appeal to the “variety of products,” “heirloom vegetables,” “freshness,” and “nutrition” etc. No matter what words are chosen in the advertisements, consumers, namely shareholders, members or subscribers, trust in the special added value of produce from the farm for reasons of personal contact.

We will focus mainly on organic farming and its distribution system in this study, because we believe it would be the best field for our study on personal trust. In other words, we will concentrate on direct FCRs in the distribution of organic produce. We will present cases from Japan of direct FCRs for organic produce in the following section. The data are collected through field research conducted in 2008 and 2009.

Cases of Japan's TEIKEI Partnership

What are TEIKEI partnerships?

TEIKEI partnerships, and CSA as well, are based on personal trust. Organic certification is based on system trust and is required when there is no personal trust. In European countries, organic certification systems diffused simultaneously with organic produce and is becoming popular. In Japan, however, TEIKEI partnership began in the 1970s, while the official organic certification of Japanese Agricultural Standards (JAS) was established in 2001. The certification system was 30 years behind the start of TEIKEI partnerships.

To understand more about TEIKEI partnerships, we will present some characteristics described in previous research. Masugata (2008) defines TEIKEI partnerships as “a circulation system of organic produce, created by the joint efforts of farmers and consumers, and based on reciprocal trust relationships” (p.7). Hatano (2004) describes the aim of TEIKEI partnerships as one “to connect, from an equality-oriented perspective, farmers and consumers who share common values” (p.56). For activists, the leading ideas of TEIKEI were expressed in “TEIKEI 10 principles” by the Japan Organic Agriculture Association in 1978. No.1 and 5 from “TEIKEI 10 principles” are reproduced below (Minamida 1995, pp.192-195).

1. Principle of Friendly Reciprocity: The co-partnership between farmers and consumers is defined as an intimate personal relationship (...) and quite different in quality from trade relations (...). That kind of co-partnership should be based upon a reconsideration, by both, of the conventional values and attitudes deep-rooted in their daily life and conduct.

5. Principle of Face-to-Face Relationship: The producer-consumer co-partnership will be sustained and enhanced if both groups will try every possible means to understand each other well and develop friendly relations. Hence the more individual members of one group meet those of the other, the better.

Considering these definitions, TEIKEI partnerships can be described as circulation systems of organic products created by farmers and consumers, who share common values and understanding of one another, based on reciprocal personal trust relationships.

Classification of TEIKEI partnerships

Hatano (1998) classifies TEIKEI partnerships by type of organization. Within this classification, he describes the development of the groups from the 1970s to 1980s. According to Hatano's descriptions in Table 2, the OF-OC and NF-NC types of TEIKEI partnerships are in the majority in Japan now. We divided both the OF-OC and NF-NC types into two subtypes.

Table 1. Classification of TEIKEI partnerships.

Type	Farmers	Consumers
OF-OC	Group	Group
NF-OC	Individual	Group
NF-NC	Individual	Individual

Source: Hatano (1998, pp.20-21)

Table 2. The development of TEIKEI partnerships.

Stage	Characteristics
The 1970s	The establishment stage: the most popular TEIKEI partnership was type OF-OC.
The 1 st half of 1980s	The growth stage: type NF-OC appeared.
The 2 nd half of 1980s	The diversification stage: types OF-OC and NF-NC increased.

Source: Hatano (1998, pp.20-21)

Type OF-OC1 and OF-OC2

In these types, farmers and consumers are organized into groups. In the OF-OC1, consumers maintain strong relationships among themselves. Type OF-OC1 conforms well the feature of TEIKEI partnerships from the 1970s, while in type OF-OC2, farmers and consumers again organize into groups, but the consumer groups are organized systematically as cooperatives or corporations. In those consumer groups, the consumers maintain weaker relationships among themselves than that of the consumers in the type OF-OC1.

Type NF-NC1 and NF-NC2

In these types, the farmers and consumers are not organized into groups. They trade organic agricultural products individually. Type NF-NC1 is a simple form of trade between a farmer and a consumer. They have FCRs in type NF-NC2, the farmers and consumers do not organize into groups, but there is, however, an informal element among consumers. There are some consumers who have a comparatively strong relationship with

the farmer and provide agricultural and delivery labor.

Six TEIKEI partnerships

Outline of the cases. In this research, we interviewed eight groups and individuals (No. I ~ VIII in Table 3 and 4) among six TEIKEI partnerships. In OF-OC2 and all of the NF-NC cases, we collected data only from the farmer's side. The outline of those organizations is presented in Table 3.

Table 3. Type OF-OC groups of TEIKEI partnership.

Type	Side	Place	Year of foundation	Number of members	Amount of production/ consumption	Sales/purchases channel
OF-OC1	Farmers group (I)	Ichijima-cho, Hyogo	1975	5 persons	About 200 boxes per week (vegetables)	Almost 100 % of the produce is sold to this consumers group.
	Consumers group (II)	Kobe city, Hyogo	1974	305 households	About 200 boxes per week (vegetables)	Main items are purchased from this farmers group, and some other items are from other groups.
OF-OC2	Farmers group (III)	Yūza-machi, Yamagata	1992	482 households	6600 tons per year (rice)	Almost 100 % of the produce is sold to this consumers group.
	Consumers group (IV)	Tokyo, (head office)	1965	310,000 households	76 billion yen per year (2006)	It has many other trade connections with other producers groups.
OF-OC2	Farmers group (V)	Takahatacho, Yamagata	1986	59 households	240 tons per year (rice)	The produce is sold to some cooperatives (30%), to some consumers groups (20%), and to rice shops and individuals (50%).
	Consumers groups	Various locations				

Source: Interview data

Table 4. Type NF-NC groups of TEIKEI partnership

Type	Side	Place	Year of foundation	Number of farmers	Amounts of production area	Number of consumers
NF-NC1 (VI)	Farmer	Ishioka city, Ibaraki	1980	1 household	3 ha	150 households
NF-NC1 (VII)	Farmer	Ushimado-cho, Okayama	2002	1 household	1.2 ha	50 households
NF-NC2 (VIII)	Farmer	Yamato city, Kanagawa	2003	1 person	2 ha	80 households

Source: Interview data

Farmer-Consumer Relationships in the Cases

<Type OF-OC1 between group I and II >

The farmers and consumers conduct meetings twice a year to develop plans for their cropping/planting. They decide on the prices of the produce during these meetings. The prices do not fluctuate. Each consumer chooses to order either a large box or small box. The farmers fill the boxes while considering prices and items. The boxes are delivered to each consumer's home, or are picked-up at certain spots once a week by transporters. The farmers do not use agricultural chemicals or chemical fertilizers.

The members of consumers group II said that they trust the farmers (I) because they know each other and have already established face-to-face contact. The group ceased a relationship with a particular farmer because of doubts that he was not using agricultural chemicals. When the problem arose, the farmer said, "Why do you doubt me so much?" and refused to submit any data. They stopped the TEIKEI partnership with him because they were unable to maintain a good relationship with him.

<Type OF-OC2 between group III and IV >

In this case, farmers are organized as a union (group III), while consumers are organized as a cooperative (group IV). The price of rice is determined based on the cost of production. The pricing is determined annually in February before planting. If the gap between the determined price and market price expands by more than 10%, a conference is held to alter the price. Group IV orders products before planting and purchases all produce. The produce from group III is delivered to each consumer's home or picked-up at spots with other products from other farmers' groups. They are allowed to use weed-killer only once a year, and if necessary they could use chemical pesticides not more than twice a year.

Group IV inspects Group III by following self-imposed standards. It is significant that consumers perform inspections even if they are not professional. Group IV thinks that to go and see the places of production is important to build trust with farmers and their produce. Because of their frequent meetings, Group IV has already established their

trust to Group III. The farmers separate into groups and attend meetings that are held in places near the consumers' residences. Such meetings are held 58 times at various consumers' sites in 2009. After attending these meetings, producers are more often than not, inspired to double their efforts to produce food worthy of consumers' trust. On the way home from one such meeting, a young producer said to himself "Tomorrow, I will really work hard in my rice paddy." After looking at the faces and hearing the concerns of consumers, their minds changed greatly.

<Type OF-OC2 of group V >

Farmers' group V ships their rice to several consumer groups, rice shops, and individuals. The total area of production is 68 hectares, one-third of which is cultivated by non-chemical or organic farming and two-thirds of which is being cultivated using a reduced chemical farming. The price of rice and the delivery channel are diversified, because consumers and farming method are also diversified. Now they have many sales channels and the amounts of sales through TEIKEI partnerships are only 50% of the total. One of the leading farmers said the merit of TEIKEI partnership is more on the moral support rather than economic support.

<Type NF-NC1 of VI >

In this instance, the prices of items are fixed and almost the same as the market prices. Consumers choose the size of box (L, M, S) and pay the corresponding price. The farmer delivers boxes to some consumers' homes. Home delivery service is used for other consumers who live in far places. The farmer does not use any agricultural chemicals or chemical fertilizers. There are two reasons why farm VI is regarded as trustworthy. The first reason is that the farmer and consumers can exchange ideas through direct communication when the farmer delivers boxes, and through messages that are written by consumers on postal transfer sheets. The second and most significant reason why consumers want to buy produce from farm VI is the noble character of the farm master and the good quality of vegetables.

<Type NF-NC1 of VII >

Consumers order vegetables as a unit of box that costs 2,000 yen each. Like case VI, the farmers' group VII delivers boxes to some consumers. Home delivery service is offered to consumers who live in far places. The farmer does not use any agricultural chemical or chemical fertilizer. Consumers have established their trust to this farmers' group because of the positive attitude of the farm master.

<Type NF-NC2 of VIII >

Case VIII might be identified as a CSA, as consumers pay membership fee once a year or for a half a year in advance. Consumers choose the size of box (M or S), which corresponds to the amount paid as membership fee. Some consumers come to the farm to pick up their boxes, while other farmers offer delivery services particularly to the consumers who live in far places. The farmer does not use any agricultural chemicals or

chemical fertilizers. The farmer and the active consumers (core members) intend to create a new type of community by making a connection between food production and consumption. They thought that their relationship is different from a traditional TEIKEI partnership. Some consumers work together with the farmer, mainly in the delivery of food. All information about the farm is openly distributed to the members. As an example, the farmer sends messages by e-mail everyday. These above relationships seem to support the trustworthiness of consumers (members) to the farmer and farm produce.

Personal Trust in FCRs

As a whole, personal relationships between farmers and consumers seem to generate trust between the two sides, resulting in consumers' trust of produce from the farmers. The OF-OC1 type between group I and II is an example of an early type of TEIKEI, in which farmers and consumers know each other well, know each other's faces, and consumers trust the produce. In such a case, consumers' trust in the farmer is inseparable from their trust in the produce. The words of the farmer in trouble, "Why you doubt me so much?", illustrate the transformation of the doubt of using agricultural chemicals to that of the character of the farmer. Trust in type NF-NCs depends on the character of farmers more simply. In the NF-NC1 types, consumers regard farmers' character as trustworthy enough to make produce that are of high quality. In the NF-NC2 type, farmers and consumers intend to make a community like group, in which members know and help each other. It is easy to imagine that such a relationship nurtures trustworthiness in each other.

Though the early type OF-OC is losing popularity especially in young families now, the face-to-face relationships survive in the more systemized TEIKEI partnerships. In the OF-OC2 type between group III and IV, a kind of face-to-face relationship is embedded systematically. Both farmers' and consumers' sides notice the importance of keeping face-to-face relationships even in the established contract system. When they know the partners' situation, they might deepen their trustworthiness toward the partner. On the consumers' side, there are some opportunities of farm visits planned by cooperative organizers. Farmers have to participate in the meetings with consumers and young farmers are encouraged to do so because it has an educational purpose.

A feeling of duty toward the consumer arises from farmers whose faces they imagine even while toiling in the fields. System trust is overwhelming general society and the sphere of personal trust is shrinking in the modern world. We could verify, however, that personal trust survives and takes on an important role in the food supply system. Whether this kind of survival is unique to the food supply as well as the search for working personal trust in other phases of the food supply system are our next questions.

References

- Allen, Patricia, 2004, *Together at the Table: Sustainability and Sustenance in the American Agrifood System*. The Pennsylvania State University Press, University Park.
- Bingen, Jim & Lawrence Busch (eds.), 2006, *Agricultural Standards: The Shape of the Global Food and Fiber System*. Springer.
- Coff, Christian, 2006, *The Taste for Ethics: An Ethic of Food Consumption*. Springer, Dordrecht.
- Giddens, Anthony, 1990, *The Consequence of Modernity*. Polity Press.
- Hatano, Takeshi, 1998, *Economy of Organic Agriculture: TEIKEI Networks*, Nihonkeizaihyoronsha, Tokyo (in Japanese).
- Hatano, Takeshi, 2004, "A Consideration of Teikei Relationship between Agricultural Producers and Consumers." *Journal of Organic Agriculture Research* Vol.4 (in Japanese).
- Luhmann, Niklas, 1979 (1973), *Trust and Power*. translated by H. Davis et al., John Wiley & Sons
- Masugata, Toshiko, 2008, *Movement of Organic Agriculture and Teikei Networks in Japan*, Shinyosha (in Japanese)
- Minamida Seiji, 1995, "Teikei or Copartnership –A Characteristic Type of the Producer-Consumer Relationship in the Organic Agriculture Movement in Japan." *Tech. Bull. Fac. Hort. Chiba University* No.49, pp.189-199
- Sugimura, Kazuhiko, 2004, *Economy of African Peasant: Comparative study on Norm of Organization*. Sekaishissha, Kyoto (In Japanese)

Homepages

- CFSC (Community Food Security Coalition), <http://www.foodsecurity.org/index.html>, 8. Feb. 2010
- Local Harvest about CSA, <http://www.localharvest.org/csa/>, 2. Mar. 2010

The Bicol University Community Outreach Services Strategy: Educating to Build Resilient Communities¹

Fay Lea Patria M. Lauraya, Ph. D.²
Leilanie D. Pavilando, MS Agriculture³
Joseph L. Bartolata, Ph. D.⁴
Maureen B. Mamansag, BS Agriculture⁵
Bicol University
Legazpi City, Philippines

Abstract

The Philippines is considered as one of the most disaster-prone countries in the world and being an archipelagic country, it is in the receiving end of the effects of global warming. The Philippines particularly the Bicol Region, considers agriculture as a vital sector for its economic sustainability with the average Bicolano family living on rice, corn and coconut production, farm labor and small-scale fishing. Bicol's economy would have performed better if not for its vulnerability to disaster and climate change. Industries in Bicol Region which are highly dependent on natural resources are vulnerable to climate change. Increasing temperature, changing precipitation patterns and water resources availability, increasing levels of CO₂ and ocean acidification will have a large impact on sustainability of agriculture, forestry and fisheries. The province of Albay, in the Bicol region has been exposed to climate hazards such as tropical cyclones aggravated by natural calamities such as volcanic eruptions, flashfloods and mudslides, putting the lives of the Albayanos at high risk. Given this phenomenon, this paper discusses the interventions of the Bicol University's along its mandates of instruction, research and extension to build resilient communities.

Introduction

“A great day it will be when the Philippines is removed from the list of most disaster-prone countries; when despite the many geophysical, climatic and conflict borne hazards that exist for reasons of its location on planet earth and current socio-political and economic dynamics, people are spared of significant losses and suffering that often result from calamities” (Oxfam, 2009).

The Philippines, particularly Albay Province, contends with a list of geophysical hazards such as typhoons, floodings, storm surges, volcanic eruptions, lahar flows, earthquakes, landslides, subsidence, etc. Climate change further exacerbated its effects by compounding and altering its dynamics and triggering new ones.

² SUC President IV, Bicol University, Uflauraya@yahoo.comU

³ Co-author, Director, BU Extension Service Center, Ulpavilando@yahoo.comU

⁴ Co-author, Chief, BU Planning and Management Office, josephbartolata@yahoo.comUH

⁵ Co-author, Technical Staff, BU Research and Development Center,
Umaureenmamansag@yahoo.comUH

It is for these reasons that the use of knowledge, innovations and education is important for all stakeholders to build a culture of safety and resilience at all levels. Adaptation to climate change involves three dimensions: social, economic and ecological – all have bearing on sustainable development.

The Bicol University (BU) with its mission of “bringing the University closer to the community”, implement activities of educating and building resilient communities amidst disasters. It has evolved various interventions in the community that address food security, livelihood, environment, health, nutrition and psychosocial aspects.

BU, through its extension mandate, continuously innovates and promotes appropriate approaches that address community development more particularly along disaster risk management, climate change adaptation and mitigation towards community resiliency. Thus, the various units and colleges, through the leadership of the Bicol University Extension Service Center (BUESC), are consolidating all their efforts to help build resilient communities.

The Framework of Governance: Universal Indicator of Performance for all State Universities and Colleges (SUCs) in the Philippines

BU adopts the universal logical framework (Figure 1) for all State Universities and Colleges (SUCs). The Major Final Outputs (MFOs), which will become the priority investments of the university in education, research and extension services. Expectedly, provision of these services will result in enhanced knowledge and skills, attitudes and values of Filipinos who will eventually lead productive lives. This will be the substantial contribution of BU towards a knowledge-based economy as articulated in “The Philippine Main Education Highway,” where the key strategic resource necessary to overcome poverty is “knowledge itself—educated people, their ideas and innovations, and their entrepreneurial spirit.”

BU, being the premiere state university in Bicol Region, envisions to become a University of Excellence characterized by scholarship engagement for the community towards sustainable development.

The pursuit and realization of the University’s vision and goals are anchored on the twin strategies of excellence and innovation. BU will, without fail, pursue excellence by creating at least seven more Centers of Excellence (COE) based on Commission on Higher Education (CHED)’s criteria of evaluation, in addition to the two it currently has: COE in Teacher Education and COF in Fisheries. It will seek accreditation from both the national and international accrediting bodies to attain the highest level of recognition at program and institutional levels. It will forge academic links and promote internationally its curricular programs. Innovation, on the other hand, will be addressed through vigorous engagements in research and extension particularly in the areas where the Region is most vulnerable. It will become a catalytic institution in promoting economic development. Its researches will meet the challenge of fostering science and technology-inspired innovations to improve current industry systems and practices.

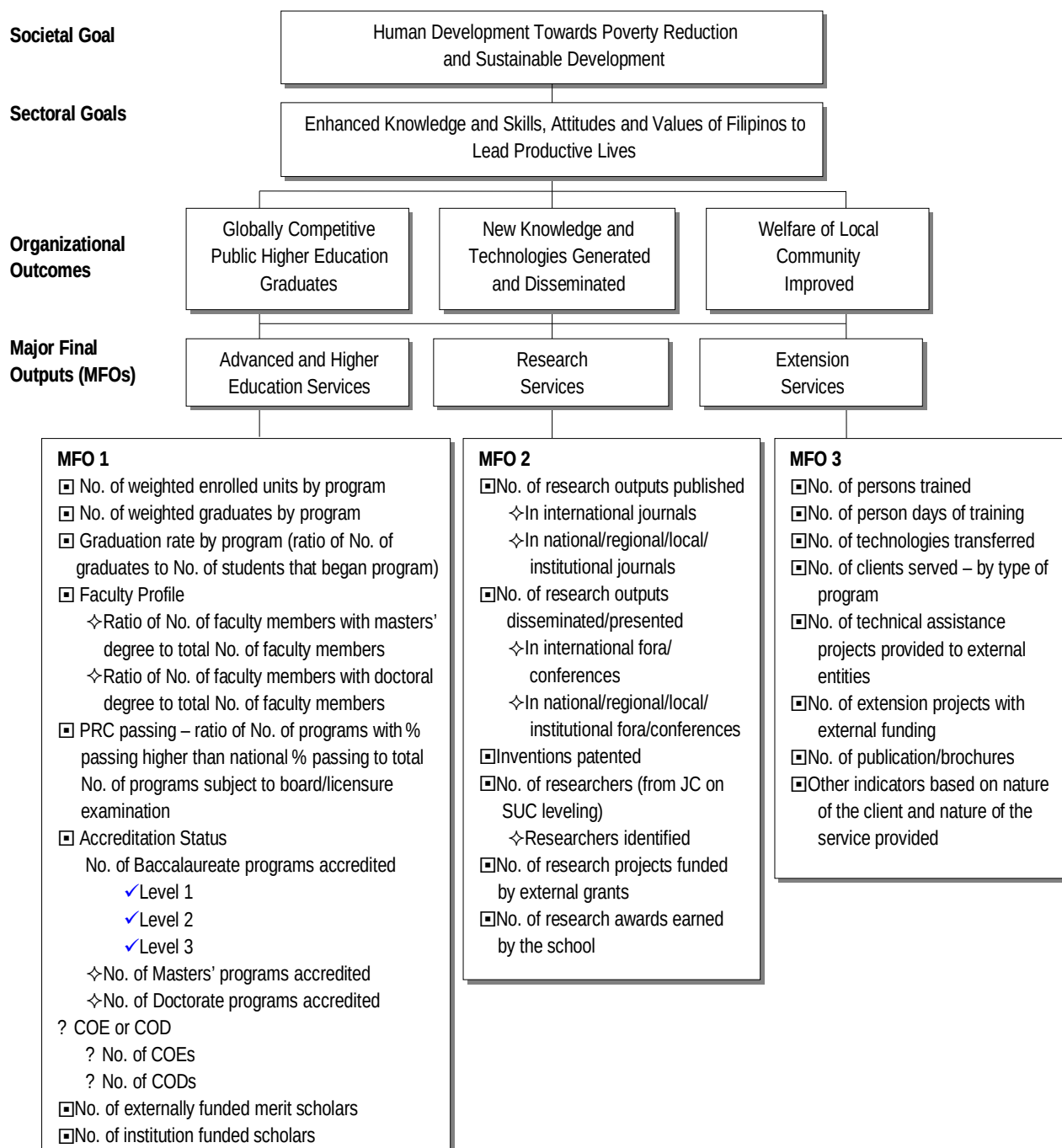


Figure 1. Logical Framework (SUCs)

The mandates of BU are focused on the three major final outputs, namely: instruction, research and extension services. The direction is to be able to make the university's major functions reflect its vision for education towards sustainable development. Curricular offerings have been restructured integrating the concepts of sustainable development and climate change adaptation.

On instruction, BU's curricular offerings are discipline-based, clustered according to the following fields of specialization: Technology, Architecture, Engineering and Sciences, Agriculture, Forestry and Fishery, Education, Health and Medicine, Social Sciences, Business and Entrepreneurship, and Arts and Letters, Culture, Recreation and Sports. Course offerings are undergoing review to evaluate where and how climate change adaptation in the context of sustainable development agenda and the university's core values of scholarship, leadership, character and service can be integrated both in the General Education Courses and professional courses. Notable among its curricular programs that have already responded to the existing climate change adaptation are adaptive agricultural courses in line with Agriculture, Forestry and Natural Resources (AFNR) Program, community health nursing, emergency health management, and adaptive infrastructure in architecture course, among others.

Complementing the instruction mandate is the research function which is anchored on the following thematic areas: food security and poverty alleviation, enhancing the competitiveness of business and industry, environment and natural resources management, gender and development, improving basic social services, policy studies, and climate change adaptation. A paradigm shift has also been adopted in the priority areas in response to the call of the times.

Completing the trilogy of functions is the extension function which revolves around extension training, information packaging dissemination, specialist support services, and action-cum-research. The area of focus of extension service should be along its complementary role to research and instruction functions.

The three-fold function shall become the priority investments of the university. But the provision of quality instruction, research and extension services is capital-intensive which usually constrains all State Universities and Colleges (SUCs). This is where BU will put to good use its dynamism and creativity.

Full realization of these mandates will lead to producing globally competitive graduates imbued with highly-held values of scholarship, leadership, character and service, to generating and disseminating new knowledge and technologies beneficial to all stakeholders, and to improving the well-being of local community. All these are expected to contribute to achieving human development needed in a modern progressive economy within the context of sustainable development.

The Community that BU Serves

Bicol region is made up of six provinces, namely: Albay, Camarines Norte, Camarines Sur, Catanduanes, Masbate and Sorsogon. It has a total land area of roughly 18,130.4 km². As of 2007, the population of the region reached 5,109,798.

The Bicol region is basically an agricultural area with the average Bicolano family living on rice, corn and coconut production, farm labor and small-scale fishing. Among the regions in the country, Bicol exhibits one of the lowest levels of productivity mainly because of its frequent exposure to typhoons and floods and also because it is often affected by such weather phenomena as the El Niño and La Niña (Lobrigo et.al. 2005, pp.12). For this reason, it has remained to be one of the poorest regions in the country. In fact, it ranked second in terms of the highest number of poor families in the country and in terms of poverty incidence, the region remained the fourth poorest in the country and second poorest region in Luzon. As of 2006, poverty incidence in the region rose to 41.8 percent, up by 1.2 percentage points from its 2003 level. The 41.8 percent poverty incidence translates to 422,278 poor families, higher by 10.1 percent than the 383,625 poor families in 2003(HNSCB5H (www.nscb.gov.ph/Ru5/secstats/accounts.html)).

The majority of the poor in Bicol can be found in the agricultural sector, which includes mainly crop farmers. Other poverty groups under this sector consist of subsistence fishermen, cultural minorities and small-scale miners. The poorest crop farmers are represented by at least three groups. One group consists of small farm owner-cultivators who either own land they till or recognized rights to till. Another group represents the landless rural agricultural workers or those farmers who work in agriculture but own neither land nor recognized rights to farm the land. These are the most numerous among crop farmers in Bicol region. The third and poorest farming group in Bicol is composed of marginal upland farmers or the subsistence farmers of marginal land found in rolling hills and on steep mountain slopes. These farmers mostly raise corn, root crops, vegetables and fruit trees and sometimes cultivate upland rice but receive very low returns for their products (Lobrigo et.al. 2005, pp.12).

Agriculture and agriculture-related economic activities represent the major sources of income of families in the Bicol Region. In 2008, agriculture and fishery sector contributed a total of 30.97 percent to the Gross Regional Domestic Product (GRDP) of the region (HNSCB5H (www.nscb.gov.ph/Ru5/secstats/accounts.html)) with more than 50 percent of the region's land being devoted to agriculture; 30 percent is forestland and the rest are used for residential, commercial and industrial purposes (eVISNet). Of the 2.1 million employed persons in Bicol region in October 2008, 46.33 percent was engaged in agriculture sector while 41.54 percent was in services and 12.13 in industry sector (HNSCB5H (www.nscb.gov.ph/Ru5/secstats/accounts.html)).

Bicol's economy would have performed better if not for its vulnerability to disaster and climate change. Industries in Bicol region which are highly dependent on natural resources are vulnerable to climate change. The production of crops is the most climate-dependent economic activity. Increasing temperature, changing precipitation patterns and water resources availability, increasing levels of CO₂ and ocean acidification will

have a large impact on sustainability of agriculture, forestry and fisheries. In Bicol region, the province of Albay has been exposed to climate hazards such as tropical cyclones aggravated by natural calamities like volcanic eruptions, flashfloods and mudslides, putting the lives of the Albayanos at high risk.

According to the project entitled “Mapping Philippine Vulnerability to Environmental Disasters”, Albay ranked first among the 20 provinces that is highly at risk to earthquake-induced landslide, tsunami and rainfall change; second for volcanic eruption and typhoon occurrence and 16th for the temperature change.

The Combined Risk to Climate Disasters map represents the sum of the normalized, provincialized risks to typhoon (super typhoons, typhoons, tropical storms and tropical depressions); drought caused by El Niño, projected rainfall change and projected temperature increase. The top ten provinces are: Albay, Pampanga, Ifugao, Sorsogon, Biliran, Rizal, Northern Samar, Cavite, Masbate, and Laguna. In general, Central Luzon and the Bicol regions rank high to very high on the risk scale (<http://www.observatory.ph/rm/findings.html>)

With climate change causing shifts in social and economic trend, the stark reality is that the poor are the most vulnerable and will bear the brunt of climate change impacts.

Appropriate Interventions of BU

With all this in mind, BU focuses its interventions along its mandates of instruction, research and extension to build resilient communities. As shown in the conceptual framework (Figure 1), the key inputs are the instruction, research and extension services that BU provides (Figure 2). Noteworthy is the fact that BU has established partnership with other organizations, notable among them is the Provincial Government of Albay through Gov. Joey Sarte Salceda, who considers BU as key strategy for Albay rising.

Various interventions have been put in place. On instruction, BU has mainstreamed into the curriculum appropriate theories and principles on disaster risk management, community resiliencies, climate change adaptation and mitigation and other appropriate inputs to be able to produce graduates who are exposed to real life challenges in the pursuit of their professions.

In more specific terms, interventions have been introduced along revision of AFNR courses, BS Entrepreneurship, MA in Public Administration major in Emergency Health Management, BS Microfinance, adaptive infrastructure in architecture courses, and National Service Training Program (NSTP) focused on health and environment.

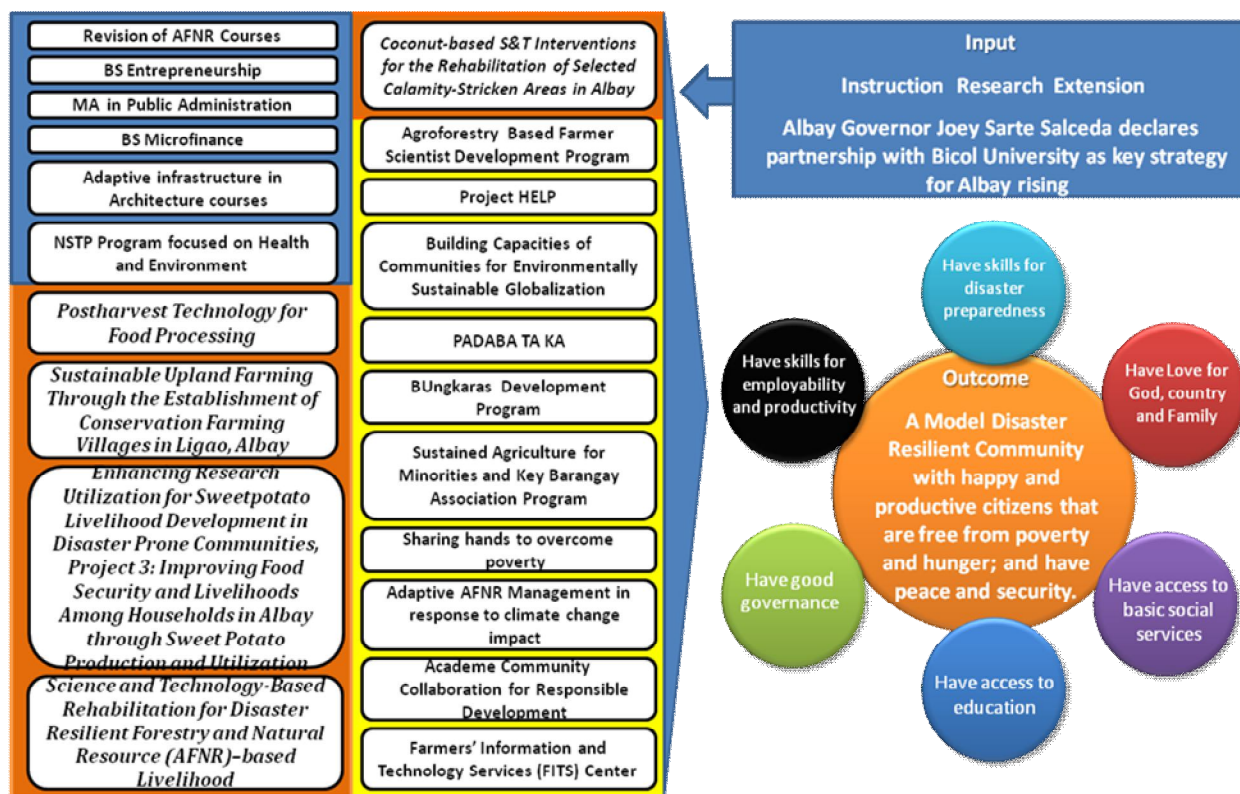


Figure 2. Educating to Build Resilient Communities: The Conceptual Framework

Research activities are geared towards generating knowledge and technology to develop breakthroughs and appropriate practices for rehabilitation and development of resilience communities. Ongoing research with external funding are focused on rehabilitation and food security after calamities, e.g. S and T based rehabilitation of calamity-stricken farms. Other specific researches include, among others, post-harvest technology for food processing, sustainable upland farming through the establishment of conservation farming villages, enhancing research utilization on local crops for livelihood development, science and technology-based rehabilitation for disaster resilient forestry and natural resources, and coconut-based S & T interventions for the rehabilitation of selected calamity-stricken areas.

On extension, BU has pursued alternative mode of educating the community through trainings and short-term courses, techno-transfer, IEC and ICT, and of developing a database and information system focused on building resiliency. It also includes developing and innovating approaches and methodologies on building resilient communities through development and action research projects aimed at coming up with a model disaster resilient community.

Extension and Community Outreach Services, focused in educating and building resilient communities using these strategies:

- *Vulnerability Assessment.* Before an intervention can be put in place, an assessment of the vulnerability of the community must be conducted. The following are important considerations in assessing vulnerabilities of communities: all vulnerability and resilience is local; vulnerability is varied—different people and communities are vulnerable in different ways to different hazards; vulnerability and resilience must be assessed in the context of general social and economic circumstances; and strategies developed must be specific to the locale and the issue.
- *Partnership Building and Linkaging.* This refers to a long term program which builds on linkages and partnership with various sectors. People's participation is a must and complete access to information and technology should be prioritized. Partnership grows through support and extension of natural caring relationships that must be nurtured through strengthening of institutions in neighborhood. It also builds on strengths and arises from self-organization and self-control.
- *Innovating, Piloting and Modeling Extension Methodologies and Approaches.* This will help build resilient communities through programs and projects implemented in calamity prone areas by operationalizing the same through the implementation of the banner programs of the different units or colleges of BU.
- *Trainings and Techno-Transfer.* Appropriate trainings will be provided for skills and capacity building and transfer of appropriate technologies.
- *Participatory Monitoring and Evaluation.* A built-in monitoring and evaluation scheme forms part of the project/program implementation to be able to revise the procedures according to its appropriateness to a given area or situation.
- *Documenting the Best Practices and Experiences.* Lessons learned and best practices must be properly documented for future reference and replication and will serve as a protocol for disaster resiliency at the national and even global scale.

All these efforts will contribute to building disaster-resilient communities that have access to basic social services, education, good governance, skills for employability and productivity, skills for disaster preparedness, and love for God, country and family. Ultimately, all these will result in communities with happy and productive citizens that are free from poverty and hunger, and have peace and security.

Challenges and Lessons Learned

For the province of Albay in particular, and the Bicol region, in general, one of the more crucial challenges it faces is how to better understand climate change impacts in all sectors. For this developing region, climate change may differ when compared to other regions in the country. This is the reason why educating to build resilient communities is of paramount importance. As far as SUCs are concerned, the challenges can be fought in three fronts: instruction, research and extension services. As far as extension service is concerned, BU, for its part, will work for standardization of work equivalent credit (WEC) for extension, initiating efforts to establish network where funds from different sources can be channeled, and increasing the budgetary allotment along extension which usually has the least among the three functions.

There is still much to become to address the continuous challenges that the province, region and country face. Disaster is a given, even in the global scale. It is now imperative for academic institutions such as Bicol University to be always relevant and responsive to the immediate needs of its service areas. Being at the forefront of education, and in pursuit of excellence and innovation, it must exist to pursue programs and projects that would contribute to attain sustainable development.

What Lies Ahead

Opportunities abound for BU. There is still a long way to go. Ultimately, what BU aims to achieve is to educate to build disaster-resilient communities inhabited by responsible citizens who are active partners in attaining sustainable development.

References

“Building Resilient Communities”, 2009, Oxfam Great Britain-Philippines Programme, p. 1

OB The Manila Observatory's Socio-Environmental Geomatics (SEG) Program. “Mapping Philippine Vulnerability to Environmental Disasters”. **Manila Observatory.** <http://www.observatory.ph/vm/findings.html>U (January 2010).

Eastern Visayas Information Sharing Network (eVISNet). <http://www.evis.net.ph/subregions/subregion5.htm> (January 2010).

1BLobrigo, Jovic E. Sonia Imperial, and Noel Rafer. “H2005. Philippine Human Development ReportH: Case Study on the Human Development and Economic Costs/Spillovers of Armed Conflict in Bicol”. Human Development Network. [http://hdn.org.ph/wp-content/uploads/2005 PHDR /2005%20Bicol Case_Study.pdf](http://hdn.org.ph/wp-content/uploads/2005_PHDR/2005%20Bicol_Case_Study.pdf) (January 2010).

National Statistical Coordination Board (NSCB5), “Sectoral Statistics: Economic Accounts”. <http://www.nscb.gov.ph/Ru5/secstats/accounts.html> (January 2010).

National Statistical Coordination Board (NSCB5), “Sectoral Statistics: Labor and Employment”. <http://www.nscb.gov.ph/Ru5/secstats/labor.html> (January 2010).

National Statistical Coordination Board (NSCB), “Poverty Incidence in The Bicol Region Worsens in 2006”. <http://www.nscb.gov.ph/Ru5/statnews/poverty.html> (January 2010).

Agriculture and Rural Community in a Social and Familial Crisis: The Case of Abandoned Rural Community and Invisible People in the Postwar Settlement in Shin-Nopporo, Japan

Nakayama Taisho
Graduate School of Letters
Kyoto University, Japan
gennakayama@hotmail.com

Abstract

There are few researches done on the abandoned rural communities in Japan. Rural sociologists observed rural communities as spaces where people live. However, rural communities have also been observed as spaces which are nearly uninhabited.

This paper highlights an abandoned rural community in Hokkaido which was earlier constructed as a postwar settlement project of Japan. The Japanese empire collapsed and lost its colonies in 1945. Not only did Japan lose colonies that had supplied food to the mainland, but many Japanese people have also repatriated causing serious food shortages. These events gave way for the launching of the postwar settlement project.

The abandoned rural community is invisible because of two aspects. First, today the area where the community was located is a part of a forest park. Few ordinary people know the fact that there was a community in the forest. Second, certain members of the community have yet to be observed by any researcher because they could not find the people in any documents or interviews.

This presentation discusses the reason why the community itself and the people of the community are invisible. It is an important way to approach this issue from the context of the history of Hokkaido because the modern history of Hokkaido is the history of settlement and development.

Alain Corbin described the story of “Pinagot’s forest” based on fragments of documents about the craftsman Lous-François Pinagot who lived in the 19th century and who personally recorded nothing. This presentation describes a story of a forest based on documents and interviews of the invisible people who had lived in the rural community and left afterwards. This presentation clarifies the roles of the postwar settlement, rural community and agriculture to people who lived in and passed through a postwar settlement rural community.

Introduction

French historian Alain Corbin published the book *Le monde retrouvé de Louis François Pinagot* in 1998. This study was a restoration of the history of a person and the local society who lived during the 19th century as shoe craftsman. It was full of vivid descriptions about the Pinagot's forest. Corbin's work is very challenging and interesting. However, we may have a question: Is that all? Did he make something invisible by describing it? These are also the same questions that this paper would like to pose.

This paper focuses on an abandoned rural community of the postwar settlement of Japan, in which some residents were made invisible by studies on the community. Why were they made invisible even though they had actually lived there once? How can the description of rural community change, if they were made visible again? These are the basic questions of this presentation.

Rural Community Studies and the Postwar Settlement

It should be reviewed how scholars have studied the postwar settlement of Japan and it should be shown why they have had little concern with abandoned rural communities.

The History of the Settlements in Modern Japan

The history of the settlements of modern Japan can roughly be divided into two periods. The first period is the modern settlement that began after the Meiji Restoration. The second is the postwar settlement.

After the Meiji Restoration, the pre-modern feudal system collapsed and the privileged class lost the economic base. Some of them migrated and settled in the internal colony of Hokkaido. The internal population overflow was brought about by industrialization, and part of the population immigrated to the colonies, while others settled in rural areas. The government promoted these settlements.

The Japanese empire collapsed and lost its colonies in 1945. Not only did Japan lose colonies that had supplied food to the mainland, but many Japanese people repatriated causing serious food shortages. These events gave way for the Japanese government to launch the postwar settlement project.

Historical Study on the Postwar Settlement of Japan

Some historical scholars focused on the postwar settlement as part of the history of agricultural administration and land system. For example, Nagae (2002) studied the postwar land reform of Japan which was characterized by specific tenant rights. Ito (2006) studied the sequence of prewar overseas colonial settlement and postwar settlement. Others, however, studied settlement as part of social history. Michiba (2002) focused on the history of farmers' resistance movements against the government. These

studies focused on the government's policy and its relationship with the nation (farmers). There is little rural study on postwar settlement.

Rural Community Study in Japan

Rural community study of Japan¹ has two schools. These are Suzuki Eitaro and his followers emphasizing the autonomy of rural communities, and Aruga Kizaemon and his followers emphasizing government rule. What is common on both schools is the premise of rural communities based on pre-modern rural communities (=traditional rural communities).

There is a branch of rural studies focusing on policy and aiming to solve contemporary issues. They focused on contemporary rural community where "postwar settlement" is one of the elements in the analysis.

The Meaning of Study on Abandoned Rural Community of the Postwar Settlement

As discussed above, it would seem impossible to study abandoned rural communities of postwar settlement from a conventional rural studies scheme because of the lack of traditional and contemporary factors.

Conventional rural studies focus on traditional and contemporary rural communities based on the conventional scheme. However, how could people encounter rural area and leave there in the modern times of Japan? Why did temporary peasants engage in agriculture? It is difficult to observe such points in the conventional scheme.

In 1950s, Japanese intellectuals had an argument about community. The liberal intellectuals criticized the Japanese traditional rural community. They argued that it had been the basis of the fascism in pre-war times. In the latter part of 1970s, another argument about community was raised among Japanese intellectuals. One side of them re-evaluated traditional rural community as the basis of Japanese society or one precious piece of traditional wisdom specific to the Japanese people. Iwamoto (1979) argued that they should acknowledge the common ground that there had been rural communities even during the modern times in Japan. He defined the term "rural community" as the place for agricultural production and the daily life, and he demonstrated that "(rural) community" is a series of 'fictional communities' which had been created by the government for its taxation, agricultural administration, mobilization, etc. The fictional community was different from the "rural community" in terms of production and daily life. Nevertheless, both arguments confused pre-modern and modern Japanese official village with "rural community."

Amino (2000) argued that the notions of 'peasant' and 'lower peasant' in pre-modern time were one of the fictions which had been made by the government during pre-modern times in Japan in order to be dominated. Japanese historians believed that 'peasant' meant people engaged in agriculture, and 'lower peasant' is described as a class that is poorer than the 'peasant.' Amino demonstrated that some of the 'lower peasants' are those engaged in businesses other than agriculture and some of them were

far richer than “peasants” because of their successful businesses. Nakayama (2010) found out similar situation in a modern settlement of Japan. In one of the colonies of the Japanese empire, ‘Karafuto’, ‘farmers’ as called by the colonial government and scholars included forestry laborers who were seasonally engaged in agriculture.

The conventional notions of ‘rural community,’ ‘peasant’ and ‘farmer’ should not be used without enough consideration for study on the postwar settlement. The concern of this presentation is the multiple concealments, the making of something invisible, of an abandoned postwar settlement community.

This paper revolves around two subjects. The first subject clarifies the reason for concealing an abandoned postwar settlement community and a certain kind of invisible people, and the second is an observation of a remarkable encounter of people and rural areas in a postwar settlement called Shin-Nopporo, which had once existed on the forested hills located along the western edge of Sapporo city, the capital of Hokkaido. There are two kinds of concealments. The first is the concealing of the postwar settlement itself, and the second is the concealing of a kind of people living at the postwar settlement in the historical descriptions.

Methodology

This paper utilized the data that were derived from documents and interviews. The documents are memorials of settlers and a series of local histories published in the area. Its former residents and researchers were interviewed for this study. Interviews for the researchers are important because they have created part of the concealment.

An Invisible Abandoned Community

The Shin-Nopporo Settlement and Rural Community

A former military, Terasaki Seiji (=SN0492) unofficially settled in the Nopporo forest on September 17, 1945. Taking advantage of the opportunity, the official postwar settlement project of Shin-Nopporo was launched, which also signaled the beginning of its history. The government decided on the settlement, and the settlers formed the rural community. As shown in Table 1, the number of households who settled in the community was 106 in 1946 and 76 in 1965, after which, the settlement was abandoned in 1968 because of the establishment of the Nopporo forest park.

Table 2 shows that about 43 households (57%) worked as military men or soldiers. In pre-war times, 63 households (84%) lived in Hokkaido and the remaining 12 households (16%) lived in the outlands; ‘Karafuto (Sakhalin)’, ‘Chishima (Kuril)’ and ‘Manchuria (the East-North of China)’.

Shin-Nopporo consisted of five blocks and each block had its own group for collaboration³. The first group consisted mainly of former military personnel (department of food), miners and others. The leader was a former probationary army officer. The second group consisted of former military personnel (department of

clothing) and others. The leader was a former army captain (SN042). The third group consisted of former military personnel (department of weapon), repatriates, retired official and others. The leader was a former military (SN049). The fourth group consisted of second and third sons of the farmer around the forest, and repatriates from 'Karafuto (Sakhalin)'. The fifth group consisted of repatriates from 'Manchuria (the East-North of China)' and 'Karafuto' and others. The leader was a repatriate from 'Manchuria' (SN072).

The Nopporo Forest Park was established after the Shin-Nopporo community was abandoned. That included the most of the area of the settlement. After the community was abandoned, some residents moved to other places and the rest remained near the forest.

Table 1. A simple chronology of events in Shin-Nopporo settlement.

year	Events
1945	September 17th, Terasaki's and other 2 households settled in the national forest (Nopporo forest)
1946	106 households settled
1947	10 households settled
1948	established the settlers' cooperatives, electrified partially, opened the Shin-Nopporo elementary school
1954	integrated the Shin-Nopporo settlers' cooperatives
1959	started the bus service in the forest
1960	started the water supply completely
1962	electrified completely
1965	76 households
1966	closed the elementary school
1967	disbanded the Shin-Nopporo settlers' cooperatives
1968	abandoned the community, established the Nopporo forest park
1970	closed postwar settlement service and integrated into the general agricultural administration

Source: made out based on Nishida(2005) by the author

Table 2. Members of the Shin-Nopporo settlers' cooperative in 1963.

Total households	75

Former job	number	%
military, soldier	43	57
agriculture, fishery	11	15
worker, miner	9	12
white collar	5	7
others	7	9

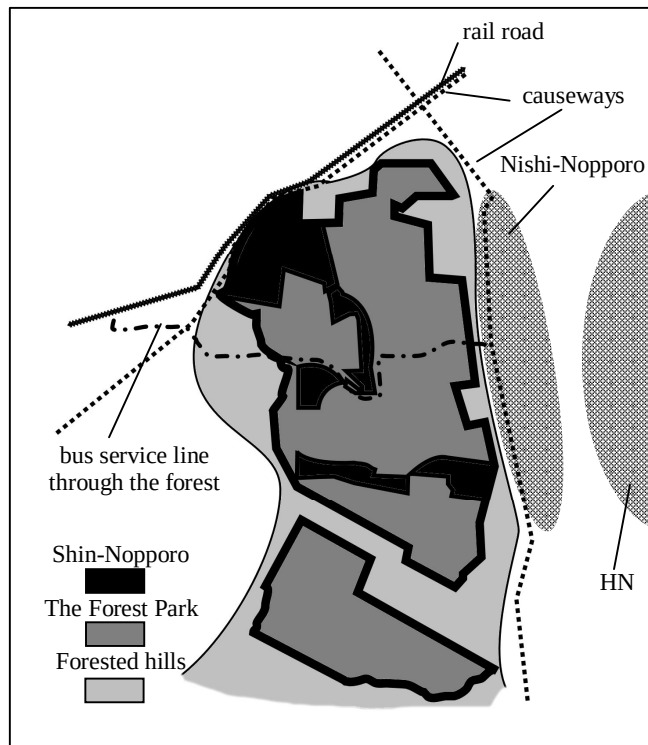
Former residence	number	%
Hokkaido	63	84
Sakhalin, Kuril	5	7
The DongBei of China	7	9

Year	number	%
1945	27	36
1946	15	20
1947	27	36
1948-1958	6	8

Source: made out based on Asami (1963, pp124-126) by the author

Environmental Sociological Study on the Nopporo Forest Park

In an environmental sociological study on the forest park, the Shin-Nopporo settlement was invisible. Takenaka (2005) found that the people of Nishi-Nopporo community managed some areas of the park before the government had established the park. This study was a harmonious story about "Settlement" and "Environmental management." Takaneka's thesis has little reference to the Shin-Nopporo settlement. She mentioned that she had no idea or concern of the settlement at that time, although she had done ecological research in the forest park before starting her environmental sociological research⁴. She focused only on Nishi-Nopporo because the Nishi-Nopporo community was a time-honored settlement derived from famous settlers organization: "Hokuetsu-Syokuminsya." She was not interested with the Shin-Nopporo settlement because of the lack of tradition and sustainability.



Map 1. The neighboring area of the Shin-Nopporo settlement
Source: made out based on Nishida (2005, p54) by the author

Concealment by Pro-Natural Environment

The settlement has been made geographically invisible. The forest park area includes most of the area of the Shin-Nopporo settlement. However, today, there are no houses or buildings in the forest park. It is difficult for ordinary people to know that people had once lived there.

“Virgin Forest” is the catchphrase of the forest park. The fact that people once lived there cannot give visitors any positive meaning. Actually, the fact has not been shared actively, even though, during this decade, some local historians have referred to the settlement as the forest.

A Certain Invisible People

Local Historical Study about Shin-Nopporo

During this decade, several local historical studies on Shin-Nopporo appeared. Nishida’s (2005) work is an important historical description about Shin-Nopporo based on official documents and interviews. However, the descriptions also made a certain group of people in the forest invisible: the agricultural laborers in Shin-Nopporo. Her

study did not describe the agricultural laborers, and mentioned that she had no idea of their existence⁵. Why was she unable to portray them?

She was one of the members of the editorial board of “The new History of Sapporo City.” She did historical research about a military explosive magazine nearby the forest and she met a former military of explosive, S. Terasaki as an informant. Terasaki was a leader of the third group of Shin-Nopporo community and one of the first settlers. Taking the opportunity, she got engaged in the local history research on Shin-Nopporo.

Because of the background, her research had two limitations. First, Shin-Nopporo was an abandoned community. She chose informants from the former residents listed on official documents in which there were only the settlers’ names. Secondly, she may have held a bias that the residents of the community must be only the settlers (landowner).

It is not fair to criticize her for these limitations. The trick of the history of the settlement in Hokkaido should be referred to. It refers to the tendency that only settlers are described as residents in rural areas and they are the poorest people in the society. For example, the local history “The Showa History of Ebetsu” (1995) said “In this era, the word ‘settlers’ as well as ‘repatriates’ meant the poor with indignity” (Ebetsushi-Somubu, 1995, p178). Narratives of settlers often come from the viewpoint of settlers, mainly hardship and memory of settlement. The settlers remember the former agricultural laborers who had lived within the same community in those days. However, the settlers would not refer to the laborers because they were not asked about the laborers by interviewers. The word which means “agricultural labor” would also cause this confusion. Settlers often called agricultural labor in the settlement ‘demen’ without distinguishing the work of agricultural laborers from the work of settlers. If the interviewer had no idea of agricultural laborers, she/he could not notice which one the word meant and would never know the existence of the agricultural laborers. Thus, ‘the myth of settlers’ would be formed.

The Research Approach

This research is derived from other research in another postwar settlement, HN. In a series of interviews of resident SN089 (=HN013, it was found out that SN089 had lived in Shin-Nopporo. However, there was not much description of agricultural laborers such as SN089 in Shin-Nopporo. The agricultural laborers in Shin-Nopporo were made visible by interviews in the another postwar settlement by accident.

The research⁷ found the several persons who had lived in Shin-Nopporo as non-settlers. SN091 was an agricultural laborer freeloading on SN075 (settler) and lived in the same house. He had worked in the first group and got married to SN034’s daughter. Afterwards, he settled in the postwar settlement HN which was located near the forest. SN092 was an agricultural laborer and SN072 (settler) was his elder brother. His wife was one of SN065’s younger sisters. Afterwards, he settled in the postwar settlement HN. SN095 was a horse breeder (Bakuro) and he had worked as a miner in pre-war time. SN089 also was an agricultural laborer. In the next section, his life-history will be described. It is difficult to conclude that they are all non-settlers in Shin-Nopporo.

Further research is needed make general conclusions. However, it is important to show the fact that there were non-settlers in the postwar settlement Shin-Nopporo and they have been invisible by the descriptions offered by local historians and the narratives of the settlers for a long time.

Life-Histories of the Settlers and Non-Settlers

‘Former military (including former soldier and former military)’, ‘former farmer (including second and third sons)’ and ‘repatriate’ were typical categories of settlers in the postwar settlement project of Japan. Adding non-settlers to them, this section analyzes how people could encounter rural areas and leave there, and why temporary peasants were engaged in agriculture from cases of the residents of the postwar settlement Shin-Nopporo.

Former Military (Ex. SH049=S. Terasaki)

SH049 was born in Niigata. He is a son of a barber. He was engaged in bomb production during the war. After the war, he settled in Shin-Nopporo with his family on September 17, 1945. He described the reason in later years “because I wanted to see no foreigners forever and settled in forest after the war was over⁸.” He was often engaged in the disposal of explosives on the ocean until October 1945. After that, he started “stump blowing” experimentation. “Stump blowing” was a method to blow up tree stumps with explosives. Clearing their lands of tree stumps was a serious problem for settlers. That method was 120 times as efficient as human power. His military service was over December 1, 1945. In May 1946, eight households of his former colleagues and 10 households chosen by the government settled in one of the blocks of Shin-Nopporo and he was the leader of the third group. He held the first lecture on stump blowing in July 1946 and he went around Hokkaido to lecture on the method⁹.

When the stumps blowing project ended, he started a petition for bus service with other settlers and realized it in 1959. However, after several years, they asked the government to purchase their land so that they could leave the settlement. In 1963, the government began to discuss the plan of the Nopporo Forest Park as the 100th settlement of Hokkaido anniversary. Finally, the government decided to buy out the land of the settlement in 1968 and the community was abandoned¹⁰. After the community was abandoned, he continued to work on his land because it was outside the area bought out as the forest park.

This story is a typical story of postwar settlers; postwar settlement as the place for overflow population (military etc.) evoked by the collapse of the empire.

Repatriate (Ex. SN053, SN054=brothers) ¹¹

Both SN053 and SN054 were born in Toyama. Their families were engaged in fishing. Their family was engaged in subcontract fishing in the Kuril Islands. They migrated to an inshore village of Karafuto. They had two fishing boats and employed about 30 laborers. On August 23, 1945, the USSR occupation forces occupied the capital of Karafuto. In September, they smuggled into Hokkaido under USSR occupation via their fishing boats. They reached an inshore village of Hokkaido and drifted from one town to another. Finally, they settled in Shin-Nopporo and joined in the third group.

After the community was abandoned, SN053 moved to the city and worked as a construction worker. SN054 moved to another city and managed a construction company.

This story is another typical story of postwar settlers; postwar settlement as the place for overflow population (repatriates) evoked by the collapse of the empire.

Former Peasant (Ex. SN031)¹²

He was a peasant in Hokkaido. He planned to immigrate to South America with his family around 1930. However, they gave up the plan at the Kobe port because of quarantine. They migrated to a rural area of B town, Hokkaido around 1932. After the war, he allowed for his demobilized sons (SN031b • SN031c) to settle in Shin-Nopporo. SN031 himself continued to work on his land in B town supplied rice and other food for his sons. Finally, all of his family members migrated to Shin-Nopporo around 1950. One of his sons SN031b re-settled in HN in 1960. SN031b left the land in 1972 and was engaged in agricultural labor and construction work for seven years. After that, he was an apartment owner.

This familial story is non-typical story of postwar settlers: a process to achieve a stable land base by a peasant. These complex pathways reflected their familial strategy for survival.

Non-Settlers (Ex. SN080) ¹³

SN089 was born in Hokkaido. After graduating from school (15 years old), he engaged in agricultural labor (summer) forestry labor with horses (winter) from around 1930. He was engaged in a woodworking plant at I city, Hokkaido in 1940 with his wife. Then he migrated to A city, Hokkaido and worked in a munitions factory. He was in military service and demobilized in 1944. He had migrated to Nishi-Nopporo with his family and was engaged in agricultural labor before the war ended. He migrated to Shin-Nopporo in 1949 and lived in the former house of SN090 who had left the land. SN089 was engaged in agricultural labor in Nishi-Nopporo on SN042's land. In addition, he was engaged in forestry labor. Concerning the settlers, he said "they (settlers) had a much more gracious living than us because of the military pension and their land. They hardly worked on their land because we (agricultural laborers) worked

on their land.” This statement should not be generalized. When SN089 said “they (the settlers),” the word mainly meant SN042 who had often employed him as an agricultural laborer. SN042 was a captain of the Imperial army. He had little concern with agriculture even in the settlement and preferred working in the city to work on his own land although he was the leader of the second group. It is possible to say that a household as such needed agricultural laborers.

The son SN089b was engaged in forestry labor and other work in the forest after graduating from the school. SN042 recommended him to take over SN090’s abandoned land. However, the son refused because the land was too small. Finally, they settled in HN in 1959. They planned to settle in a different postwar settlement. At that time, the son SN089b was around 20 years old and had two choices. The first was to join the army (the Defense Force), and the second was to join the HN postwar settlement. Ultimately, he chose postwar settlement because his elderly father SN089 said to him “I would quit working in this forest and go with you, if you join the army.” It implied that the son would have to work for all of his family alone. SN089b is working on his land (HN) today.

This story is non-typical story of postwar settlers: a process to achieve a stable land base by an agricultural laborer.

Comparison of the Cases

In the case of former military (SN049), the situation of “postwar (= collapse of the Empire)” was a necessary condition. Disorganization of the Imperial army generated the population overflow. In the cases of repatriate (SN053), former peasant (SN031) and non-settlers (SN089) the situation of “postwar (= collapse of the Empire)” was a sufficient condition.

Repatriates were people who returned from outlands, mainly ‘Karafuto’ and ‘Manchuria,’ which had been regarded as the solution for the population and food problem of the empire in pre-war time (Takeno, 2000). They had been part of the overflow population in pre-war times. Peasants and farmers in Hokkaido had been part of the overflow population generated in modern times in Japan as repatriates. For them, the postwar settlement was also one of chances for migration and settlement in order to achieve better land. Non-settlers were agricultural or forestry laborers that were more mobile than peasants and farmers of Hokkaido and the outlands. The government did not distribute them the land at the postwar land reform because of their mobility.

The postwar settlement was the last chance to achieve land as capital for these people. In that time, even re-building army was an economic opportunity for them. They were engaged in postwar settlement as a part of migration during the modern times of Japan.

“The postwar settlement would not have been planned if the war had not occurred,” (Sapporo kyodo wo horu kai, 2009, p3). This is one of phrases in a booklet about Shin-Nopporo and SN049 published by a local historical research group. Half of this statement is true, but the other half is not. Hokkaido, ‘Karafuto’ and ‘Manchuria’ had been the outlands for settlements in the pre-war time. They settled in those outlands because they had expected to gain higher marginal profit by outland settlement than inland settlement. It goes without saying that they expected to gain lower marginal profit by postwar settlement than the former outland because they had to settle in places such as forested hills (ex. Shin-Nopporo), marshes (HN), etc.

These cases show that agriculture was neither a start nor a goal. It implies that the story of the postwar settlement is not always the story of ‘peasants.’ Michiba (2002) discussed the postwar settlement as a part of history of resistance movement by ‘peasants.’ Of course, it is possible to conclude this from the cases presented by Michiba (2002). However, from other cases, it may be difficult to generalize the postwar settlement as the story of ‘peasants.’

Araragi (1998) had a precious study on the postwar settlement because it discussed collaboration in a postwar settlement sociologically. The collaboration was based on their identity as a settler’s organization that they had belonged to in ‘Manchuria.’ In the postwar settlement of this presentation, there were collaborations in each group. However, they were not based on the specific identity as Araragi’s case and were cases of temporary collaboration.

Conclusion

There are two factors that caused the concealment of the rural community; 1) geographical situation, and 2) deviation from harmonious story about ‘settlement’ and ‘environmental management.’ These two factors caused the concealment of a certain kind of people; 1) methodological problem, 2) limitation of the scheme of settlement history in Hokkaido. The postwar settlement was a part of migrations in modern time of Japan¹⁴. Agriculture in postwar settlement was neither a start nor a goal for the residents in the settlement. Rural community was a place for a temporary collaboration of production and social life.

Non-settlers’ stories, which have been invisible, reveal that the ‘the myth of settlers,’ especially in Hokkaido, is fiction. It implies the diversity and complexity in rural community. In ‘traditional’ rural community, people are necessarily engaged in agriculture. It requires the perspective of ‘Life in Rural.’ On the other hand, in postwar settlement, it depends on occasional condition whether a person would be engaged in agriculture or not. It seems very difficult to come up with a general theory about this. However, we can find contemporaneous and structural factors in it. It requires the perspective of ‘Rural in Life.’

Acknowledgment

The research for this presentation was subsidized by the Toyota Foundation; the research grant “Rethinking Agriculture Based on the Experience of Postwar Farmland Reclamation” (the project leader: Nakayama Taisho).

Endnotes

- 1 As concern the schools of rural community in Japan, see Takahashi (2009).
- 2 ‘SNxxx’ means individual code of former resident in Shin-Nopporo assigned by the author. ‘SN’ means ‘Shin-Nopporo,’ however, the number ‘xxx’ implies nothing. ‘HNyyy’ also means the same thing, however, ‘HN’ means other settlement.
- 3 Based on the interview for SN049 (in 2009) by the author.
- 4 Based on the interview for Takenaka (in 2006) by the author.
- 5 Based on the interview for Nishida (in 2009) by the author.
- 6 Ebets is the city which included Shin-Nopporo in those days.
- 7 Based on the interviews for SN089b (in 2009) and SN031b (in 2009) by author.
- 8 Terasaki(1968, p1).
- 9 Terasaki(1968, pp3-4).
- 10 Terasaki(1997).
- 11 Based on the interview for SN053b (in 2009) by the author.
- 12 Based on the interview for SN031b (in 2009) by the author.
- 13 Based on the interviews for SN089 and SN089b (in 2003, 2004, 2006, 2008 and 2009) by the author.
- 14 This point has been already pointed out in Michiba(2002) and others. However, there is little research which described and analyzed the process of each individual or familial settlement through each life-history.

References

- Amino, Yoshihiko. 2000. 'Nihon' towa nanika. Kodansya.
- Araragi, Shinzo. 1988. "Communityness" in the Village Reclaimed by Manshukaitakudan after World War II." *Sociology*. Vol.33. No.1. pp115-138. (in Japanese)
- Asami, Katsuo. 1963. *Ishikari Kaitaku no Ayumi*. Ishikari Kaitaku Eino Sokushin kyogikai.
- Corbin, Alain. 1998. *Le monde retrouvé de Louis-François Pinagot : sur les traces d'un inconnu 1798-1876*. Paris: Flammarion.
- Ebetu City. 1995. *Ebetsu Showa Shi*. Ebetsu City.
- Ito, Atsushi. 2006. "Farm Leading of KATO Kanji in Agricultural Settlement "Shirakawa" of Postwar Japan." *Journal of Rural Studies*. Vol.13. No.1. pp. 25-36. (in Japanese)
- Iwamoto, Yoshiteru. 1979. "Kyodotai Ronso wo Megutte." *Keizai Hyoron*. Vol.28. No.12. pp. 124-135.
- Michiba, Chikanobu. 2002. "Sengo-Kaitaku to Nomin-Toso." *Gendai Siso*. Vol.30. No.13. pp.212-239.

- Nagae, Masakazu. 2002. "Rural Land Development Policy in Japan after the W.W.II: Another View of Land Reform." *Economic Bulletin of Senshu University*. Vol.37. No.2. pp.19-42. (in Japanese)
- Nakayama, Taisho. 2010. *A Study on National Identity Specific to Peripheries in Agricultural Development and Colonial Society of Karafuto*. Doctoral thesis of Graduate School of Agricultural Science, Kyoto University. (in Japanese)
- Nishida, Hideko. 2005. "Aru Sengo-Kinkyu-Kaitaku-Shi: Ebetsu-shi Shin-Nopporo no koto." *Joseishi Kenkyu Hokkaido*. No.2. pp.51-74.
- Sapporo Kyodo wo Horu Kai. 2009. *Sengo-Kaitaku-shi Hiwa*. Sapporo Kyodo wo Horu Kai.
- Takahashi, Akiyoshi. 2009. "Sizen-son Saiko." *The meeting of the Japanese Association for Rural Studies*.
- Takenaka, Katsura. 2005. *Nopporo no Seikatus Kankyo-shi*. Master's thesis of Graduate School of Letters , Hokkaido University.
- Takeno, Manabu. 2000. *The Population Problem and Colonies in Modern Japan: 1920's-1930's Karafuto*. *Economic Studies*. Vol.50. No.3. pp.98-116. (in Japanese)
- Terasaki, Seiji. 1968. *Shin-Nopporo DaiSan-Buraku no Tanjo to Kaisan made*. The collection of the Ebetsu City Library.
- Terasaki, Seiji. 1997. "Shin-Nopporo Kaitaku Yowa". *Ebetsu no Rekishi*. No.2. pp.27-39.



THE ASIAN RURAL SOCIOLOGY ASSOCIATION (ARSA)

The Asian Rural Sociology Association (ARSA) is an offshoot of Asian Rural Sociology Working Group (ARSWG), which was set up in 1992 by a group of Asians who participated in the World Congress of International Rural Sociology Association (IRSA) in Pennsylvania State University, USA. This group was headed by Prof. Hiroyuki Torigoe of Kwansai Gakuin University, Japan. ARSA was finally born in 1996 with Prof. Tae-Young of Konkuk University, Seoul Korea, as the first President and Profs. Yoshio Kawamura, Ryukoku University, Kyoto, Japan, and Surichai Wun'Gaeo, Chulalongkorn University, Thailand as the two Vice-Presidents. Its first council members were Prof. Kalyan SankarManda, (India), Dr. Rui Quing Huang, (China), Prof. Samuel E. Gaspar, (Philippines), Prof. Mohamed Iliyas, (Pakistan), Prof. Hong-Chin Tsai, (Taiwan), Prof. Rosiady Sayuti, (Indonesia), Prof. Kanda Paranakian, (Thailand), and Prof. Sung-Youl Park, (Korea).

ARSA aims to cultivate the development of the science of rural sociology, to extend the possible application of results of scientific inquiry to the improvement of the quality of rural life, and to exchange and generate meaningful scientific founding for the rural development in Asia. As a non-profit organization, ARSA strives for scientific and educational purposes only.