

AS.1 Source Data

The main data source used was compiled from the Central Statistics Office-National Accounts Unit Eswatini. The Supply Use Tables (SUTs) for Eswatini was compiled in 2018/19 and it contained data for calendar year 2018. The main source for the data was the national accounts compilation system (Nadabas) from which the bulk of the data was extracted. Mainly data on supply (output), imports and exports. The data from the system was complemented with an establishment survey to gather information on intermediate demand for the industries included in the SUT framework.

This technical note describes how the SUT data was processed and transformed to the required GTAP format and finally provide the required matrices (structure).

AS.2 Processing of Source Data

The data was first examined to detect apparent errors in data sourced from the system and also try to understand the data structure required for the GTAP format, mainly if the source data will be able to provide requirements of submitting the table in GTAP format. Data supplied in the SUT was on products by industries. Since GTAP preference is on product by product table. First the SUT needed to be transformed into a product by product Input Output Table (IOT) using the industry technology assumption.

AS.3 Assumptions on source data

In the source data table a few of industries (mining and quarrying, manufacture of chemicals and chemical products and manufacture of textiles) produced multiple commodities. In order to have single product industries in the input output table, there was a need to create new product industries. And reclassify the products deemed to be not primary products for that particular industry. For the use of those products the structure and ratio in the supply table was applied to come up with the usage values.

AS.4 Aggregation of final demand data

In conformity with the GTAP requirements the data is supplied in four matrices, which are:

— Matrix UF → Intermediate use by sectors and final demand data

- Matrix UP → Intermediate use by sectors and final demand data (commodity taxes data not available)
- Vector OP → disaggregated output data for 45 GTAP products
- Vector MF → disaggregated imports data for 45 GTAP products

Household final consumption was aggregated to include non-profit serving institution and goods produced on own account. Final demand vectors are general government final consumption expenditure (GGFCE), Household final consumption expenditure (HFCE), Investment (GFCF), Changes in inventories and Exports.

AS.5 Inconsistencies between source data and GTAP format

- Data on commodity taxes is not available, as such the matrix containing both domestic and imports use data (UF) have same values with matrix UP.
- Imports data do not contain information on import duties

AS.6 Creation of the imports use table

Total imports are given by a total imports vector in the supply table in the source data (SUT). To come up with the imports usage table in the Input Output Table. Ratio of imports to total use is first calculated for each sector. The ratio is then used to multiply each commodity total to come out with the imports matrix. From the resulting imports matrix, it is subtracted from the total use matrix to come up with the domestic use matrix.

AS.7 Mapping source data to GTAP format

Data from the source table had 81 sectors which have been mapped to a total of 45 GTAP sectors; In some cases source data sectors have been mapped to several GTAP sectors especially on agricultural commodities. Concordances were created using the detailed GTAP sectors list together with the Central Product Classification (CPC ver 2.1) and International Standard Industrial Classification for All Economic Activities (ISIC) rev 4.

Table 8.89: List of GTAP sectors mapped

GTAP Sector Number	GTAP Sector Code	Sector Name
3, 4, 6	gro, v_f, c_b	Cereal grains nec; Vegetables, fruits, nuts; Sugar cane
9, 10	ctl oap	Bovine cattle, sheep and goats, horses; Animal products nec
13	for	Forestry

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GTAP Sector Number	GTAP Sector Code	Sector Name
15	coa	Coal
18	oxt	Other extraction
19, 20	cmt omt	Bovine cattle, sheep and goat, horse meat products; Meat products nec
11, 22	mil rmk	Raw milk; Dairy products
24	sgr	Sugar
25	ofd	Food products nec
26	b_t	Beverages and tobacco products
27	tex	Beverages and tobacco products
28	wap	Wearing apparel
29	lea	Leather products
30	lum	Wood products
31	ppp	Paper products, publishing
32	p_c	Petroleum, coal products
33	chm	Chemical products
35	rpp	Rubber, plastic products
39	fmp	Metal products
41	eeq	Electrical equipment
42	ome	Machinery and equipment nec
44	otn	Transport equipment nec
45	omf	Manufactures nec
46	ely	Electricity
48	wtr	Water
49	cns	Construction
50	trd	Trade
51	afs	Accommodation, food and service activities
52	otp	Transport nec
54	atp	Air transport
55	whs	Warehousing and support activities
56	cmn	Communication
57	ofi	Financial services nec
58	ins	Insurance
59	rsa	Real estate activities
60	obs	Business services nec
62	osg	Public administration and defense, education, health
63	edu	Education
64	hht	Health
65	dwe	Dwelling

Table 8.90: Mapping of GTAP Sectors with data from the source table for commodities

GTAP Sector Number	GTAP Sector Code	Name	Source: Commodities
3, 4, 6	gro, v_f, c_b	Cereal grains nec.; Vegetables; Sugar cane	Products of agriculture, horticulture and market gardening Products of agriculture, horticulture and market gardening (non-market)
9, 10	ctl oap	Bovine cattle, sheep and goats, horses; Animal products nec	Live animals and animal products (excluding meat)
13	for	Forestry	Forestry and logging products

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GTAP Sector Number	GTAP Sector Code	Name	Source: Commodities
15	coa	Coal	Coal and peat
18	oxt	Other extraction	Other mining products
19, 20	cmt omt	Bovine cattle, sheep and goat, horse meat products; Meat products nec	Meat products
11, 22	mil rmk	Raw milk; Dairy products	Dairy products
24	sgr	Sugar	Sugar
25	ofd	Food products nec	Fish and other fishing products
			Processed Fruits, veg, oils and fats products
			Grain mill products & animal feeds
			Bakery products
			Cocoa, chocolate and sugar confectionery
			Other food products
26	b_t	Beverages and tobacco products	Beverages
27	tex	Beverages and tobacco products	Textile and wearing apparel
28	wap	Wearing apparel	Textile articles other than apparel
29	lea	Leather products	Leather and leather products; footwear
30	lum	Wood products	Products of wood, cork, straw and plaiting materials
31	ppp	Paper products, publishing	Pulp, paper and paper products; printed matter and related articles
32	p_c	Petroleum, coal products	Coke oven products; refined petroleum products; nuclear fuel
33	chm	Chemical products	Basic chemicals
		Chemical products	Other chemical products; man-made fibres
35	rpp	Rubber, plastic products	Rubber and plastics products
39	fmp	Metal products	Fabricated metal products, except machinery and equipment
			Basic metals
41	eeq	Electrical equipment	Electrical machinery and apparatus
			Radio, television and communication equipment and apparatus
			Medical appliances, precision and optical instruments, watches and clocks
42	ome	Machinery and equipment nec	General-purpose machinery
			Domestic appliances and parts thereof
			Special-purpose machinery
44	otn	Transport equipment nec	Transport equipment
45	omf	Manufactures nec	Furniture
			Other manufactured articles (non-food) n.e.c.
			Glass and glass products and other non-metallic products n.e.c.
			Wastes or scraps
46	ely	Electricity	Electricity, town gas, steam and hot water

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GTAP Sector Number	GTAP Sector Code	Name	Source: Commodities
48	wtr	Water	Natural water
			Sewage and waste collection, treatment and disposal and other environmental protection services
49	cns	Construction	Construction
			Construction (non-market)
50	trd	Trade	Wholesale and repair of motor vehicles and motorcycles
51	afs	Accommodation, Food and service activities	Accommodation services for visitors
			Food and beverage service activities
52	otp	Transport nec	Railway transport services of freight
			Passenger transport by road
			Freight transport by road
54	atp	Air transport	Air transport
55	whs	Warehousing and support activities	Supporting transport services
			Supporting transport services (non-market)
56	cmn	Communication	Postal and courier services
57	ofi	Financial services nec	Other financial service activities
			Services auxiliary to financial services other than to insurance and pensions
			Commercial banking
			FISIM
58	ins	Insurance	Insurance and pension services (excluding reinsurance services), except compulsory social security services
59	rsa	Real estate activities	Real estate services
			Leasing or rental services without operator
60	obs	Business services nec	Professional, scientific and technical activities
			Professional, scientific and technical activities (non-market)
			Telephony and other telecommunications services
			Publishing and broadcasting activities
			Publishing and broadcasting activities (non-market)
			Investigation and security services
			Support services
			Support and operation services to agriculture, hunting, forestry, fishing, mining and utilities
			Support and operation services to agriculture, hunting, forestry, fishing, mining and utilities (non-market)
			Repair of computers and household and personal goods
			Other manufacturing services; publishing, printing and reproduction services; materials recovery services
			Services of membership organizations

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GTAP Sector Number	GTAP Sector Code	Name	Source: Commodities
			Recreational, cultural and sporting services
			Recreational, cultural and sporting services (non-market)
			Other services
62	osg	Public administration and defense, education, health	Public administration and other services provided to the community as a whole; compulsory social security services
63	edu	Education	Education services
			Education services (non-market)
64	hht	Health	Human health and social care services
			Human health and social care services (non-market)
65	dwe	Dwelling	Domestic services

Table 8.91: Mapping of GTAP Sectors with data from the source table for sectors

GTAP Sector Number	GTAP Sector Code	Name	Source: Sectors
3, 4 ,6	gro, v_f, c_b	Cereal grains nec,; Vegetables; Sugar cane	Growing of crops: ITF
			Growing of crops: SNL
9, 10	ctl oap	Bovine cattle, sheep and goats, horses; Animal products nec	Animal production (Cattle, Pigs and Poultry)
13	for	Forestry	Forestry and logging
15	coa	Coal	Mining and quarrying
18	otx	Other extraction	Other mining and quarrying
19, 20	cmt, omt	Bovine cattle, sheep and goat, horse meat products; Meat products nec	Processing and preserving of meat
11, 12	mil, rmk	Raw milk; Dairy products	Manufacture of dairy products
24	sgr	Sugar	Manufacture of sugar
25	ofd	Food products nec	Fishing
			Processing and preserving of fruit and vegetables
			Manufacture of grain mill products & animal feeds
			Manufacture of bakery products
			Manufacture of cocoa, chocolate and sugar confectionery
			Manufacture of other food products
26	b_t	Beverages and tobacco products	Manufacture of beverages
27	tex	Beverages and tobacco products	Manufacture of textiles
28	wap	Wearing apparel	Manufacture of textiles other than apparel
29	lea	Leather products	Manufacture of leather products
30	lum	Wood products	Manufacture of wood and wood products

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GTAP Sector Number	GTAP Sector Code	Name	Source: Sectors
31	ppp	Paper products, publishing	Manufacture of paper and paper products
32	p_c	Petroleum, coal products	Manufacture of chemicals and chemical products
33	chm	Chemical products	Basic Chemicals
		Chemical products	Other chemicals; man made fibres
35	rpp	Rubber, plastic products	Manufacture of rubber and plastic products
39	fmp	Metal products	Fabricated metal products, except machinery and equipment
			Manufacture of metal products, except machinery and equipment
41	eeq	Electrical equipment	Electrical machinery and apparatus
			Radio, television and communication equipment and apparatus
42	ome	Machinery and equipment nec	Manufacture of non-electrical machinery
			Manufacture of electronic and electrical products
			Special purpose machinery
44	otn	Transport equipment nec	Transport equipment
45	omf	Manufactures nec	Manufacture of furniture
			Other manufacturing n.e.c.
			Manufacture of non-metal mineral products
			Processing of waste and scrap
46	ely	Electricity	Electricity supply
48	wtr	Water	Water collection, treatment and supply; sewerage
			Waste collection, treatment and disposal activities; materials recovery
49	con	Construction	Construction
			Construction Non Market
50	trd	Trade	Wholesale and retail trade and repair of motor vehicles and motorcycles
			Wholesale and retail trade, except of motor vehicles and motorcycles
51	afs	Accommodation, Food and service activities	Accommodation
			Food and beverage service activities
52	otp	Transport nec	Transport via railways
			Passenger transport by road
			Freight transport by road
54	atp	Air transport	Air transport
55	whs	Warehousing and support activities	Support activities for transportation
			Support activities for transportation Non Market
56	cmn	Communication	Postal and courier activities
57	ofi	Financial services nec	Other financial service activities
			Activities auxiliary to financial services

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GTAP Sector Number	GTAP Sector Code	Name	Source: Sectors
			Other monetary intermediation
			FISIM
58	ins	Insurance	Insurance and pension funding
59	rsa	Real estate activities	Real estate activities, market
			Rental and leasing activities
60	obs	Business services nec	Professional, scientific and technical activities
			Professional, scientific and technical activities Non Market
			Telecommunications and IT
			Publishing and broadcasting activities
			Publishing and broadcasting activities Non Market
			Security and investigation activities
			Travel agency, tour operator, reservation service and related activities
			Support activities to agriculture
			Support activities to agriculture Non Market
			Repair of computers and household and personal goods
			Printing and reproduction of recorded media
			Activities of membership organisations
			Arts, entertainment and recreation
			Arts, entertainment and recreation Non Market
			Other personal service activities; repair services
62	osg	Public administration and defense, education, health	Public administration and defence
63	edu	Education	Education
			Education Non Market
64	hht	Health	Human health and social work activities
			Human health and social work activities Non Market
65	dwe	Dwelling	Private households with employed persons