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**AGRICULTURE, DEVELOPING COUNTRIES
AND THE WTO MILLENNIUM ROUND**

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ABSTRACT

AGRICULTURE, DEVELOPING COUNTRIES, AND THE WTO MILLENNIUM ROUND

Kym Anderson

The potential welfare gains from further liberalizing agricultural markets are huge, both absolutely and relative to gains from liberalizing textiles or other manufacturing, according to recent GTAP modeling results. Should attempts to liberalize farm trade in the next WTO round follow the same pattern as the Uruguay Round, or might a more radical approach be required to bring agriculture more into the WTO mainstream? The question is explored from the viewpoint of developing countries by focusing especially on the Uruguay Round's dirty tariffication and adoption of tariff rate quotas. The paper also examines new agricultural issues, notably food safety and agriculture's so-called multifunctionality: both were the subject of contention in Seattle in late 1999, and both have important implications for developing countries' trade. Options facing developing countries are explored in the paper's final section. The prospective new millennium round offers the best opportunity yet for developing countries to be pro-active in seeking faster reform of farm (and textile) trade by OECD countries. In return the developing countries will need to offer to open their own economies more. Fortuitously, that too is in the economic interests of rural people in poor countries.

Keywords: WTO, multilateral trade negotiations, agricultural policy reform, new trade issues

JEL codes: F13, K33, Q17, Q18

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CIES Discussion Paper 99/28**AGRICULTURE, DEVELOPING COUNTRIES,
AND THE WTO MILLENNIUM ROUND****Kym Anderson****NON-TECHNICAL SUMMARY**

For developing countries, agriculture is perhaps the most important sector to focus on in the next round of multilateral trade negotiations. The welfare cost to them of OECD agricultural policies is estimated to be well above that of textiles and clothing trade barriers. Indeed for the world as a whole, agricultural policies are more harmful to economic welfare than tariffs on all imports of manufactures, despite agriculture's small share of global GDP and trade.

Freeing agricultural markets, even though it would raise international food prices slightly, would be a net benefit to virtually all developing countries, not just current agricultural exporters. Those close to self sufficient in food may become net exporters following protection cuts abroad, for example. Others may remain net food importers only because they retain strong anti-agricultural policies of their own, so they too would benefit from farm trade liberalization abroad. This is because that would discourage some of their resources from being employed in less socially productive activities outside agriculture.

Certainly the densely populated developing countries with a strong comparative disadvantage in agriculture would have to pay more for their food imports following farm trade reform, but even they should support agricultural reforms. This is not least because fewer developing countries would then be competing with them in markets for labour-intensive manufactures such as textiles and clothing. This suggests scope for the food-importing and food-exporting developing countries to band together and negotiate as a single voice calling for barriers to both farm and textile trade to be lowered. That call would be strengthened if the least-developed countries (LDCs) joined them, with all requesting lower MFN tariffs in exchange for preferential ones for a subset of countries and commodities.

In the case of agricultural policies, traditional distortions need to be lowered and the emergence of new ones prevented. Cuts in producer and export subsidies for farmers are needed in addition to reductions in import barriers. The latter involve not just lowering out-of-quota bound tariffs but also expanding tariff rate quotas (TRQs) under which much of farm trade now operates. Those TRQs have given birth effectively to a new MFA: a multilateral food arrangement! Like the textile one that is currently being phased out (the multifibre arrangement), this TRQ regime could well leave agricultural trade with quantitative restraints for decades to come unless a concerted effort is made in the next round. Bringing agriculture fully into the WTO would involve a complete phase-out of export subsidies and TRQs, the removal of the 'blue box', and a drastic reduction in bound tariffs so as to bring applied rates down towards those for manufacturing. A quid pro quo might be to put less emphasis on

disciplining domestic policies that are not directly boosting output and trade, that is, to allow the ‘green box’ to continue.

The more reluctant are protectionist governments in agreeing to dismantle traditional distortions to farm trade, the greater the risk of new ones emerging. Two in particular of direct significance to agriculture have to do with food safety issues and agriculture’s so-called multifunctionality. As is so often the case with concerns about health or environmental standards, the food safety issue blends a mixture of genuine worries about uncertainties and externalities on the one hand, with traditional protectionists’ desires to reduce import competition on the other. The new biotechnologies that are producing genetically modified organisms (GMOs) are a classic example. Their by-product effects in both production and consumption are likely to remain uncertain for some time, causing the more risk-averse to call for bans on their production, import and sale in some countries, and for at least compulsory labeling in other countries. Among developing countries there are two other concerns: getting access to the new biotechnologies, and then ensuring that the new GM products can be sold abroad. The effects of GMO technology on developing countries thus could be positive or negative, depending on how those concerns are played out.

The multifunctionality issue has to do with claims in a few food-importing rich countries that agriculture contributes positive externalities and public goods that warrant the continuation of price supports. Even if such positive externalities were not more than offset by negative ones (on soil, air, water, etc.), and were greater than the net positive externalities provided by other sectors, the optimal government interventions would involve targeting directly the provision of those under-supplied by-products, rather than simply providing broad agricultural price supports. ‘Green box’ provisions should be sufficient to meet these needs.

The developing countries’ wish-list for this next round might also include:

- remove tariffs on tropical (including processed) agricultural products,
- replace specific tariffs with ad valorem ones so as to discriminate less against the lower-quality products of developing countries,
- use the Swiss formula approach in making market access commitments, since that will reduce tariff peaks and escalation most,
- seek a firm phase-out date for agricultural TRQs, as was obtained for textiles and clothing in the Uruguay Round, but with limits on the extent to which safeguards can replace the quantitative restrictions at the end of the phase-out period,
- seek firm commitments, preferably written into OECD countries’ schedules, on the extent of economic and technical assistance to cope with adjustment to reforms, especially for least-developed and net food-importing developing countries, and
- support the liberalization of trade in maritime services, given the potential for the cartelized OECD firms that own most of the liners to extract, via higher markups, much of the exporters’ gain from goods trade liberalization.

AGRICULTURE, DEVELOPING COUNTRIES, AND THE WTO MILLENNIUM ROUND

Kym Anderson

One of the great achievements of the Uruguay Round of trade negotiations was the bringing of agricultural policies under much greater multilateral discipline through the new World Trade Organization (WTO). The Uruguay Round Agreement on Agriculture (URAA) led to the conversion of non-tariff barriers to agricultural imports into bound tariffs, and those bound tariffs are scheduled for phased reductions, as are farm production and export subsidies, between 1995 and 2000 (with developing countries having an extra four years). Since the URAA requires members to return to the negotiating table in 2000, the question addressed in this paper is: what are the interests and options for developing countries in that next round of negotiations? This question is pertinent not only because the vast majority of the world's poor are developing country farmers, but also because, for a range of reasons, numerous developing countries are less than happy with the URAA outcome. Those concerns need to be addressed if the next (Millennium?) Round is to succeed.

The paper makes several claims. One is that agricultural traditional market access issues remain the main priority for the next round, because agricultural protection rates in OECD countries will still be huge at the turn of the century. But 'dirty' tariffication and the introduction of tariff rate quotas in the URAA mean that large commitments in terms of bound tariff cuts and/or quota expansions will be needed if agricultural protection is to be reduced significantly. Whether that is done in the same way as in the UR (percentage cuts to bound tariffs, export subsidies and domestic support and growth in the share of consumption imported), or whether a more radical approach is needed, is a moot point.

Secondly, for several reasons reforms in other sectors also are important for developing country agriculture, not least because having them on the negotiating agenda can bring to the table groups that can counter farm protectionist lobbies. Adding new issues to the agenda can contribute in a similar way, albeit at the risk of diverting attention away from traditional market access issues.

Thirdly, among the other issues that will be raised in the next WTO round are two of concern to some high-income, food-importing countries. They relate to their assertions that stricter technical barriers to farm trade are necessary for food safety reasons, and that agriculture's so-called 'multifunctional' nature requires that the sector be treated differently from other sectors. If handled badly in the millennium round, both could lead to outcomes detrimental to developing country agriculture.

The paper begins by making the obvious point that, given the diversity within the group, there is more than one set of developing country interests in agricultural trade issues. Since those interests are not always well understood, an attempt is made to clarify them and identify the extent to which the different sub-groups would benefit from agricultural reform. The paper then examines the traditional issues as they affect developing country agriculture, before turning to the newer issues including food safety and agriculture's so-called multifunctionality. It concludes by reviewing some of the options facing developing country negotiators.

Defining developing country interests

Almost all developing countries have an interest in the agricultural parts of the next round of multilateral trade negotiations, either directly or indirectly. Consider four groups of such countries. Firstly, the exporters of tropical farm products face relatively low tariffs on most of their primary exports, but there are important exceptions such as bananas. Also, they face much higher effective tariffs on many of the processed versions of tropical products, which hinders their capacity to export the processing value-added component.

Secondly, developing country exporters of farm products grown also in temperate areas (e.g., grains, livestock products, sugar and oilseeds) typically face high import tariffs and restrictive tariff rate quotas when trying to sell into OECD countries' markets. They have a clear interest in seeing those barriers lowered. It is true that among this group is a subset of developing countries whose exports of farm products enjoy preferential access into OECD countries' markets. In the short term at least, they may lose sales revenue on those items if the OECD countries' MFN tariff rates are lowered. Even so, they may gain enough sales of other farm products whose tariffs have been lowered to more than offset the cut in their margin of preference, and/or they may be able to negotiate compensation.

Thirdly, there are the net food-importing developing countries that fear agricultural protection cuts by OECD countries will lead to higher international food prices for their imports (and perhaps fewer concessional imports via food aid or subsidized sales). Yet even those developing countries need not lose from farm support cuts abroad. If, for example, they are close to self sufficient in food (as so many net food importers are), and reform abroad raises the international price of food, they may switch to become sufficiently export-oriented that their net national economic welfare rises. A second possibility is that the country's own policies are sufficiently biased against food production that the country is a net importer despite having a comparative advantage in food. In that case, it has been shown that the international price rise can improve national economic welfare even if the price change is not sufficient to turn that distorted economy into a net food exporter (Anderson and Tyers 1993). That comes about because the higher price of food attracts mobile resources away from more-distorted sectors, thereby improving the efficiency of national resource allocation. Because of these two possibilities, the number of poor countries for whom a rise in international food prices might cause some hardship is much smaller than the number that are currently not net exporters of agricultural products.

Within developing countries, the vast majority of the poor are in farm households that would benefit directly from a food price rise. Most of the rest of the poor would benefit indirectly from farm trade liberalization via a rise in the wage for unskilled labour, which may be sufficient to more than offset the rise in food prices. Since the more affluent people in cities would find it relatively easy to pay a little extra for food, the vulnerable group of under-employed poor would be quite small and could be compensated with food aid programs at low cost.

Fourthly, for those developing countries which are rapidly accumulating capital, developing their infrastructure, and industrializing, their comparative advantage is gradually moving from primary products to (initially unskilled) labour-intensive manufactures. While that lowers their direct interest in agricultural trade reform abroad, it heightens their interest in reducing barriers to their exports of textiles and clothing. That interest of theirs in textile trade is shared by agricultural-exporting developing countries, for if newly industrializing countries (NICs) could export more manufactures, they would tend to become larger net importers of farm

products.¹ Conversely, lowered industrial-country barriers to farm trade would reduce the need for the more land-abundant developing countries to move into manufactures in competition with the newly industrialized ones. This suggests scope for the two groups to band together and negotiate as a single voice calling for barriers to both farm and textile trade to be lowered.

Even if a country's national economic welfare were to decline following the change in its terms of trade resulting from the next multilateral trade negotiations, that does not mean the economy would be better off not participating in the round. On the contrary, that economy's welfare would fall even more if it did not participate, because it would forego the economic efficiency gains from reforming its own policies.² There is also the likelihood in this next round – already dubbed 'the development round' by the EU -- that participating poor economies that lose from multilateral liberalization could secure much more compensation than in previous rounds, in the form of technical and economic assistance commitments.

It is thus in the national economic interest of such countries to be pressured from abroad to commit to such reform, painful though that may be politically for its government. The political pain tends to be less, and the prospect for a net economic gain greater, the more sectors the country involves in the reform. The economic gain is prospectively greater the more sectors it involves because a wider net reduces the possibility that reform is confined to a sub-set of sectors that are not the most distorted. In the latter case, resources might move from the reformed sector to even more inefficient uses, thereby reducing rather than improving the efficiency of national resource use.

Of course net national economic welfare is not the only criterion that drives governments to act as they do. Indeed until recently, it may not have been even a major one. However it is steadily becoming more dominant, for at least two reasons. One is the rapid globalization of the world that technological and economic policy changes have stimulated over the past decade or so, a major effect of which is that

¹ That is more so the more their government is constrained by WTO commitments from following the earlier EU, Japanese and Korean examples in raising food import barriers increasingly as industrialization proceeds (Anderson and Hayami 1986). Manufacturing exporters in newly industrializing countries have a direct interest in such constraints to agricultural protection growth at home, because farm supports raise the price and reduce the quantity of mobile resources (especially low-skilled labour) available for factory work.

economies will be penalized ever-more rapidly and severely through capital flight for bad economic governance. The other reason is the broader mandate of the WTO, which makes it easier now than before the Uruguay Round for developing countries to engage profitably in cross-sectoral exchange of market access commitments. Both developments add a new liberalizing dimension to the domestic political market for protection policies (Grossman and Helpman 1995; Hillman and Moser 1995).

With these points in mind, we turn first to examine developing country interests (a) in the traditional market access issues associated with the next WTO round, and then (b) in some of the newer issues.

The traditional issues

The legacy of the Uruguay Round Agreement on Agriculture

For most farm products and OECD countries, actual tariffs will provide no less protection at the beginning of next century than did the non-tariff import barriers of the late 1980s/early 1990s, according to Ingco (1996). This is because in most cases tariffs were bound well above the applied rates (or the tariff equivalents of the quantitative restrictions) in place at the end of the Uruguay Round. That is true in other sectors also, but to a much lesser extent. Table 1 suggests that a bound tariff cut just 40 per cent greater than in the Uruguay Round would bring the average bound rate down to applied rate average for manufactures, whereas for agriculture the depth of cut would need to be three times greater than in the Uruguay Round to close the gap (compare column 1 and 4). The final column of Table 1 shows that a one-third cut in the bound tariffs on 'other manufactures' would bring its average down to each region's applied rate average for all goods, whereas for textiles and clothing a cut of about one-half would be needed and for agriculture (including processed food) the cut would have to be about four-fifths.

Binding agricultural tariffs well above applied rates has also allowed countries to vary applied tariffs below the binding so as to stabilize the domestic market in much the same way as the EU has done in the past with its system of variable import levies

² For empirical support for this proposition, see for example Ingco (1997) with respect to least-developed countries and Anderson and Strutt (1999) with respect to Indonesia. The point is made strongly also in the volume on the Uruguay Round edited by Martin and Winters (1996).

and export subsidies. This means there will be little of the reduction in fluctuations in international food markets this decade that tariffication was expected to deliver.³

Even getting agricultural (and textile) bound tariffs down to currently applied rates on those products would require big cuts. Yet applied rates for textiles and clothing are 2.5 times, and agriculture's are 3.5 times, those for other manufactures. Clearly, action is needed on two tariff fronts: getting bound rates down to applied rates, and lowering applied rates on these two outlying industry groups – both of which are of vital interest to developing countries.

As if that weren't enough, a third front requires attention. Agricultural-importing countries agreed also to provide minimum market access opportunities, such that the share of imports in domestic consumption for products subject to import restrictions rises to at least 5 per cent by the year 2000 under a tariff rate quota (less in the case of developing countries). Even though within-quota imports attract a much lower tariff than out-of-quota imports, such tariff rate quotas (TRQs) have several undesirable features: they legitimize a role for state trading agencies, they generate quota rents, they introduce scope for discriminating between countries, and they can reduce national welfare by much more than similarly protective import tariffs.

More specifically the Appendix to this paper shows, among other things, that:

- in the presence of TRQs the national welfare cost of agricultural protection can be considerably greater than under a similarly protective tariff-only regime, and that cost tends to rise more when there is (as in the latter 1990s) a fall in international food prices;
- with a TRQ regime, a cut in the out-of-quota bound tariff may have only a fraction of the effect on prices and quantities traded (and possibly none at all) of a cut of the same size under a tariff-only regime, not only when the bound rate exceeds the applied rate but also when the applied rate is above the prohibitive tariff in the presence of a TRQ;
- the effect of a tariff cut on national welfare, by contrast, may be much greater when a TRQ rather than a tariff-only regime is in place, depending on how the quota is being administered before and after that reform; and

³ Francois and Martin (1998) demonstrate, however, that since many agricultural tariffs are specific and farm prices fluctuate from year to year for seasonal reasons, binding those tariffs does lower both the mean and variance of their ad valorem equivalents over time, even when the bindings are well above the applied rates.

- an expansion of the market access (quota) commitment need not expand trade and welfare, for it is always possible for the quota administrator to allocate the quotas so as to ensure under-fill such that no more or even less imports in total flow in.

Models such as GTAP are in principle capable of handling these complications though careful additional programming, but to generate reliable numbers requires also assimilating a much greater volume of policy data than is required when a simple tariff-only regime exists. Until all those data are collected and added appropriately to the model databases, model results of the effects of a cut in the bound tariff will necessarily over-estimate price and quantity effects but may under-estimate the welfare effects of reform.

A number of these undesirable features of TRQs in food-importing countries – 1,366 of which have been notified to the WTO -- are illustrated in another paper at this conference (Elbehri et al. 1999). Table 2 summarizes some of the data from that study. The low in-quota and very high out-of-quota tariffs mean potentially huge benefits are going to those allocated quota licenses. In numerous cases quotas are far from being filled, however, one possible reason being that quotas are allocated (inadvertently or deliberately) to imports from high-cost suppliers incapable of making full use of them. And the fact that the quota often represents a high proportion and sometimes 100 per cent of actual imports suggests some out-of-quota tariffs are virtually prohibitive.

The aggregate level of domestic support (AMS) for industrial-country farmers is to be reduced to four-fifths of its 1986-88 level by the turn of the century. That too will require only modest reform in most industrial countries, partly because much of the decline in the AMS had already occurred by the mid-1990s. This has been possible because there are many forms of support that need not be included in the calculation of the AMS, the most important being direct payments under production-limiting programs of the sort adopted by the US and EU. A risk that needs to be curtailed is that the use of such “blue box” instruments, as with exempt “green box” instruments such as quarantine and environmental provisions, may spread to other countries and other commodities as the use of farm income support via trade and direct domestic price support measures is gradually curtailed through the WTO.

Thus, without underrating the Uruguay Round's achievement of establishing rules for agricultural trade and securing some reform, it has to be recognized that very

limited progress has been made over the past five years in reducing agricultural protection and market insulation, and a great deal of reform remains to be undertaken relative even to textiles and clothing let alone other manufactures.

The potential gains from further trade policy reform

When the implementation of the Uruguay Round is complete in 2005, what will be the potential for further gains from reforming agricultural markets of OECD countries compared with the gains from protection cuts in other sectors; and how large are those potential gains from OECD liberalization compared with gains from developing country reforms? According to a recent paper using Version 3 of the global economy-wide model known as GTAP (Anderson, Hoekman and Strutt 1999), the gains from removing remaining tariffs and subsidies would be huge.⁴ That empirical work is in the process of being updated using Version 4 of GTAP (Anderson et al. 2000).

The economic significance of the projected distortions in the different sectors by 2005 depends not only on the size of the price wedges but also on the size of each sector's production and the importance of its products in consumption. Table 3 suggests that if all merchandise trade distortions were removed globally, almost half (48 per cent) of the estimated global economic welfare gains (ignoring environmental effects) would come from agricultural and processed food policy reform in OECD countries – even though such products in those countries contribute only 4 per cent of global GDP and less than one-tenth of world trade. Another one-sixth would come from reform of farm and food policies of developing countries (defined here as in the WTO to include newly industrialized countries such as Korea). Textiles and clothing reforms appear pale by comparison with agricultural reform: their potential global welfare contribution is barely one-tenth that of agriculture's (7 per cent compared with 65 per cent). This big difference reflects two facts: one is that projected distortions to prices for agriculture are more than twice those for textiles and clothing in 2005; the other is that textiles and clothing contributes only 1.5 per cent to the

⁴ Because that computational exercise involved removing all trade distortions, many of the difficulties raised in the Appendix, that relate to measuring the effects of partial reform of a tariff rate quota regime, are absent.

value of world production and 5 per cent to the value of world trade, half or less the shares for farm products (Anderson, Hoekman and Strutt 1999).

However, two assumptions are crucial in generating the results reported in Table 3. One is that China and Taiwan are assumed to join the WTO soon and enjoy the same accelerated access to OECD markets under the UR Agreement on Textiles and Clothing (ATC) as other developing countries that already are WTO members. The other crucial assumption is that OECD countries fully implement the ATC. The latter is far from certain to happen though, particularly if China were to join WTO soon and phase out its 'voluntary' export restraints (VERs) on textiles and clothing by 2005. Dropping either of those assumptions reduces very substantially the estimated gains from Uruguay Round implementation (Anderson et al. 1997), and therefore would raise the potential gains from textile and clothing reform in the next and subsequent WTO rounds.

Even so, agricultural protection would remain far more costly to the world economy than barriers to textiles and clothing trade – and more than twice as costly as protection to other manufactures, despite the latter having much bigger shares in the value of world production and trade than farm and processed food products.

Moreover, if OECD governments did renege on the spirit of the ATC, for example by using 'safeguards' such as anti-dumping measures to limit their textile imports after 'voluntary' export restraints are abolished at the end of 2004, the industrialization of developing countries as a group would slow down and hence their need to depend on farm products to trade their way out of poverty would be greater.

The distribution of the gains across regions that would result from full trade liberalization is clear from Table 3. As always, most of the gains accrue to the liberalizing region. For example, all but one-tenth (12/122) of the gains from high-income countries removing distortions to their trade in farm and food products accrues to those countries. Even so, that farm trade reform contributes more than one-quarter of the total welfare gains to developing countries from developed countries liberalizing their merchandise trade (12/43). As for developing countries liberalizing their own farm and food policies, three-quarters of the benefits therefrom stay with the developing countries themselves (31/43), and those policies contribute almost half of the gains from those countries' overall merchandise trade reform (31/65).

WTO members were right, therefore, to insist that agricultural reform must continue into the new century without a pause. In particular, developing countries as a

group have a major stake in the process of farm policy reform continuing: according to the model results in Table 3, farm and food policies globally contribute 40 per cent (17/43) of the cost to developing economies of global goods trade distortions. Textile and clothing policies also harm them greatly, but nowhere near as much as farm policies.⁵

For reasons explained in the previous section, even many food-importing developing economies would benefit from farm policy reforms of high-income countries. For the subset that would suffer a deterioration in their terms of trade, however, the extent of the rise in their food import prices would be very small. The earlier Anderson, Hoekman and Strutt study found that full liberalization of OECD farm policies would boost global agricultural trade by more than 50 per cent, but would cause real international food prices to rise by only 5 per cent on average, such is the extent of global farm supply response to liberalization.

What should be done to further the agricultural reform process?

In terms of farm export subsidies, nothing less than a ban is needed to bring agriculture into line with non-farm products under the GATT. They are, after all, almost exclusively a Western European phenomenon apart from sporadic US involvement: five-sixths of all export subsidies in the mid-1990s were granted by the EU, and all but 2 per cent of the rest were accounted for by the US, Norway and Switzerland (Tangemann and Josling 1999, p. 16).

With respect to domestic subsidies, gradual reform of policies of the US and EU, in particular the further de-coupling of farm income support measures from production as with America's FAIR Act of 1996, may allow removal of the 'blue box' in the next round of talks. It was an anomaly introduced into the UR negotiations in 1992 simply to satisfy just two members so the negotiations could proceed. Also, efforts to tighten the 'green box' criteria could be made, so as to reduce the loopholes they provide for continuing output-increasing subsidies, and to further reduce the Aggregate Measure of Support.

⁵ It should be recognised that these results ignore the effect of tariff preference erosion. In so far as a developing country receives such preferences at present in OECD markets, the above results slightly overstate the potential gains from their reforms.

But the most important area requiring attention has to do with import market access. Tariffication appeared to be a great step forward. However, the combination of dirty tariffication by developed economies (setting bound rates well above applied rates) and the adoption of very high ceiling bindings by developing economies allows many countries still to vary their protection as they wish in response to changes in domestic or international food markets. Reducing bound tariffs from 50-150+ per cent to the 0-15 per cent range of tariff rates for manufactures is one of the major challenges ahead. If the steady rates of reduction of the past are used, it will be several decades before that gap is closed – and some time even before many of those bound tariffs reach current applied rates.

At least three options for reducing bound tariffs present themselves. One is a large across-the-board tariff cut. Even if as much as a 50 per cent cut were to be agreed, however, many very high bound tariffs would still remain. A second option is the “Swiss formula” used for manufactures in the Tokyo Round, whereby the rate of reduction for each item is higher the greater the item’s tariff level. This has the additional economic advantage of reducing the dispersion in rates that was introduced or exacerbated during the Uruguay Round. In particular, it would reduce many of the tariff peaks and the extent of tariff escalation that bothers developing countries. And a third option is the one used successfully in the information technology negotiations, namely, the “zero-for-zero” approach whereby, for selected products, tariffs are eliminated altogether. In contrast to the second option, this third option would increase the dispersion of tariffs across products, increasing the risk that resources will be wastefully diverted from low-cost to higher-cost activities. While that might appeal as a way of allowing attention to then focus on the politically difficult items such as dairy and sugar, the manufacturing sector experience with long-delayed reductions in protection of textiles and cars makes it difficult to view this third option optimistically as a quick solution.

The just-mentioned tariff reductions refer to above-quota imports. There is also a pressing need to focus on in-quota imports, that is, those that meet the minimum access requirements in the UR Agreement on Agriculture (generally 5 per cent of domestic sales by 2000 for developed economies). Those quotas were introduced ostensibly to guarantee traditional exporters a minimum level of market access, equal at least to what was available before tariffication, given that tariffs have been bound at rates greatly above applied rates. As many as 36 WTO member

countries listed TRQs in their Uruguay Round schedules, of which at least half actively use them. But as the Appendix makes clear, this system of tariff rate quotas (TRQs) ensures that agricultural trade policies continue to be very complex. In particular, their existence reduces the extent to which future tariff cuts will lead to actual import growth in the medium term, and it is worrying that quotas have on average been barely two-thirds filled according to the count of notifications to the WTO Committee on Agriculture during 1995 and 1996 (Tangermann and Josling 1999, p. 26).

Agricultural-exporting countries are understandably reluctant to suggest TRQs be removed, because TRQs provide at least some market access at low or zero tariffs. Nor would allowing TRQs to be auctioned be seen by all as a solution, because that would be like imposing the out-of-quota tariff on quota-restricted trade that the TRQ was designed to avoid. If banning TRQs is not yet possible, the next-best alternative is to expand them, so as to simultaneously reduce their importance, increase competition, and lessen the impact of high above-quota tariffs.

One can imagine an outcome from TRQ expansion that is either optimistic or pessimistic from a reformer's viewpoint. On the one hand, optimists may say: if the TRQs were to be increased by, say, the equivalent of one per cent of domestic consumption per year, it would not be very long in most cases before the quota became non-binding. Expanding the TRQ could thereby be potentially much more liberalizing in the medium term than reducing the very high above-quota tariffs. Such an approach may require binding within-quota tariffs at a reasonable level (such as that for manufactures).

On the other hand, negotiators familiar with the tortuous efforts to reform the quota arrangements for textiles and clothing trade see the agricultural TRQs as a way of re-cycling the acronym MFA before it disappears in 2004 when the last of the textile quotas are scheduled to be removed. In this case it would stand for a 'multilateral food arrangement' (Francois 1999a). Since the first inception of textile quotas was around 1960, it looks like it will take fifty years or so before they are finally abolished. Is that the expected lifetime of agricultural TRQs?

Those with this more pessimistic view may wish to put the case for a more radical approach to the next round of agricultural negotiations, namely to bring agriculture much more into line with the treatment of non-agricultural goods in the WTO. For example, they might call for the total elimination of agricultural TRQs

(along with export subsidies and export credits) and a major reduction in bound (out-of-quota) tariffs. To soften the blow of that request, their quid pro quo could be to suggest WTO put less emphasis on trying to discipline farm domestic measures other than direct output-increasing subsidies. The almost infinite scope for re-instrumentation of domestic price-support measures makes disciplining them very difficult anyway. And, as Snape (1987) has pointed out, tightening constraints on border measures would ensure an increasing proportion of the cost of support programs would be exposed via the budget and thereby subjected to regular domestic political scrutiny.

Why agriculture needs other sectors in the next WTO round

Agricultural negotiations and supportive analytical efforts to date have focused primarily on the traditional instruments of agricultural intervention, namely border measures and producer subsidies. Yet much of the distortion to incentives facing internationally competitive farmers stems from their own countries' non-agricultural policies (Schiff and Valdes 1992). Since the WTO negotiations focus on reciprocal exchange of market access concessions, export-oriented farmers have a negotiating interest not only in better access to food markets abroad but also in more competition from abroad in their own economies' markets for non-farm products. That applies not only to industrial goods but also to services.

There are at least three reasons why WTO's non-agricultural negotiations are relevant to agriculture. One is that the government of a WTO member that imports farm products and exports non-farms goods and services will be more interested in lowering its impediments to agricultural imports if agricultural-exporting members lower their impediments to non-farm imports. This is because its loss in political support from farmers will be compensated by political support from non-food exporters (Grossman and Helpman 1995; Hillman and Moser 1995). The second reason has to do with the fact that many non-farm goods and services are needed by farmers as intermediate inputs or to get farm products to the final consumer. If because of trade impediments those non-farm products are more expensive than they

need be, costs are raised so net farm incomes are reduced.⁶ And the third reason is that farmers compete with non-farm sectors for mobile factors of production, most notably investment funds and labour. To the extent that a country's non-farm sectors are supported by trade impediments, so its farmers can be disadvantaged by having to pay higher prices for those factors.

There is yet another reason why it is important to have other sectors on the negotiating table at the same time as agriculture. It is that many developing country WTO members are unable to engage in market access exchange just with agricultural goods, as they have relatively little intra-sectoral trade in farm products.

For all these reasons, the probability of the next WTO round delivering further agricultural reforms will be significantly greater if negotiations also seek to achieve protection cuts for other sectors, including services.

Fortunately, services are already scheduled to be on the agenda for the next Round. Further liberalization of manufacturing industries is also required, especially in developing countries where industrial tariff rates are still high. Further textile and clothing reform, which would give a major boost to developing economies as a group, would encourage labour-intensive industrial production in newly industrializing countries. That would be at the expense of agricultural production in those countries in so far as farm household labour is attracted to factories. Hence it would have the flow-on effect of providing new market opportunities for agricultural exporters in other countries. This shows up even in model simulations involving an across-the-board liberalization in all manufacturing globally, as in Hertel and Martin (1999). Their unreported simulation results show that when manufacturing tariffs are cut globally by 40 per cent, agricultural exports of developing countries *as a group* would hardly change, but the net food imports of the developing East Asia sub-group would rise by \$2.8 billion per year (in 1995 US dollars) while Latin America's and Sub-Saharan Africa's net agricultural exports would rise by \$2.5 billion per year.

⁶ The importance of post-farm gate activities to farm income increases rapidly with urbanization. It is not uncommon for the costs (including normal profits) of getting a farm product from the farm gate to the retail consumer to be several times the farmer's cost of production of the unprocessed product. Also important to exporters of bulky farm products are maritime shipping costs. Shipping lines not only tend to be owned by OECD firms, but also tend to be cartelized. A recent study by Francois and Wooten (1999) estimated that, depending on the degree of collusion, shippers could absorb, in the form of higher markups, up to half the gains from trade liberalization.

Agriculture and ‘new’ trade issues

Inclusion of new trade agenda issues in the next round is considered by some developing country negotiators as undesirable because it would distract attention from the market access issues that are deemed to be of greater importance to them. However, their inclusion could have the advantage that more OECD non-agricultural groups would take part in the round which, depending on the issue, could counter-balance forces favouring agricultural (and other sectoral) protection. As well, better rules on some of those new issues would reduce the risk of farm trade measures being replaced or made ineffective by domestic agricultural measures and technical barriers to trade that may be almost as trade-distorting—a risk that has grown considerably in the past year or so.

Such issues as competition policy and investment policy are as relevant for developing country agriculture as for other groups. However, since they may not be included in the millennium round, and their implications for agriculture are in any case discussed well elsewhere (e.g., Tangermann and Josling 1999), attention in the rest of this section is focused on the interests of developing countries in two emerging issues that very directly affect agriculture. They are the issues surrounding (a) technical standards, including SPS and food safety in the wake of the new biotechnologies, and (b) agriculture’s so-called multifunctionality.

Technical standards, including SPS and food safety measures

The inability of the Standards Code that came out of the Tokyo Round to adequately address sanitary and phytosanitary (SPS) issues, plus the desire to reduce the risk of re-instrumentation of agricultural support to SPS measures in response to the reforms committed to under the URAA, gave birth to the SPS Agreement during the UR. That agreement defined new criteria that had to be met if a country chose to impose regulations more onerous than those agreed in international standards-setting bodies. It, together with the UR’s strengthening of the dispute settlement procedures at the WTO, was bound to raise the profile of SPS matters. That profile has been raised even more dramatically, especially in Europe, with the emergence of several food safety issues: ‘mad-cow’ disease, beef hormones, and transgenic food products or genetically modified organisms (GMOs).

Developing countries have a complex set of interests in these developments. One is that the SPS Agreement requires a WTO member to provide scientific justification for any measure that is more trade-restricting than the appropriate international standard would be, and to assess formally the risks involved. At least some technical assistance to help developing countries meet these requirements has been provided, but more may be needed.

A second interest is in maintaining and increasing access to other members' markets that are protected by SPS measures. Again some technical assistance in meeting those importers' standards is helpful. However, numerous countries use very blunt quarantine instruments that excessively restrict imports well beyond what is necessary for protecting the health of their plants and animals, or their citizens in the case of food safety concerns. For example, there are outright bans on imports of many products, including into agricultural-exporting countries seeking to preserve a disease-free image. The levels of protection involved are in some cases equivalent to tariffs of more than 100 per cent. Without some form of notification requirement on WTO members that forces members to disclose the degree to which trade is restricted by such measures, reform in this area is likely to be confined to the very small proportion of those cases that are brought before the WTO's dispute settlement body (DSB). The resource requirements of such legal proceedings ensures the pace of reform by that means alone would be glacial, and would be skewed towards concerns of those richer WTO members able to afford to bring such cases to the DSB.

Who gains and who loses from an SPS measure varies from case to case, depending on how widespread are the externalities affecting production and/or consumption. In the straightforward situation where the import restriction is aimed simply to prevent the rise in the cost of disease control for domestic farmers, the latter group gains at the expense of domestic consumers and overseas producers. James and Anderson (1998) provide an example where the cost to consumers is likely to have outweighed any possible benefit to producers, resulting in a net national loss (not to mention the loss to potential overseas suppliers) from apparently excessive protection in that case where broader externalities appeared to be absent.

Those domestic consumers are unlikely to be a source of pressure for liberalization of quarantine barriers, however, and not just for the usual reasons (poor

information, high costs of collective action because of free riding, etc.). As well, citizens are often concerned about possible risks to the natural environment from importing exotic diseases and/or about the safety of imported food. And their demands for higher quality, safer food and for environmental protection are going to continue to rise with their per capita incomes.

However, perceptions about the safety of different foods and food production and processing methods, and conformity assessment procedures, differ greatly—even among countries with similar income levels. The WTO Dispute Settlement case, brought by the US/Canada against the EU over its ban on imports of beef that had been produced with the help of growth hormones, shows that standards differences across countries are difficult to resolve even with a great deal of scientific advice. So too does the controversy over the banning of intra-EU beef trade over the ‘mad-cow’ disease scare. How much more, then, are trade disputes likely to arise over issues in which the scientific evidence is far less complete? Thus not having consumers’ concerns represented in the SPS Agreement has been a two-edged sword: on the one hand it has meant the absence of a voice arguing that domestic consumers should have better access to lower-priced imported food currently excluded by excessive quarantine regulations; but on the other hand it has kept out of the SPS debate such issues as the consumers’ ‘right to know’ via, for example, labeling. That latter concern is not going to disappear though. On the contrary, it is likely to show up in dispute settlement cases under the WTO’s Agreement on Technical Barriers to Trade (TBT).⁷

Whether or not wealthy consumers are irrational and hyper-risk averse when it comes to food safety issues is not really the point. Providing them with more scientific information, and improving the reputation of national, regional and international standards-setting bodies, may be valuable initiatives but they may do little to alter consumer opinions in the medium term, and in any case such information is scarce on new issues (Mahe and Ortalo-Magne 1998, Henson 1998).

In the case of policy dialogues surrounding GMOs, far more heat than light has been generated so far. Attempts to promote science-based assessment of the risks

⁷ Indeed one paper has already been posted on the Internet advocating activists to argue under the TBT Agreement for the right of WTO member governments to require compulsory labeling of products containing GMOs sold in their markets (Stillwell and Van Dyke 1999).

involved have met with extreme versions of the precautionary principle, manifest in the form of complete bans on their production, importation and/or sale in numerous markets. Proposed solutions such as segregating GMO products and identifying them via labels on affected food items have been rejected by many consumer groups; they have also been resisted by the major producing countries in North and Latin America, who claim that 'like' products are involved and so no costly GMO labeling is warranted. The fact that the production of some GMO products is less damaging to the environment than is the production of traditional farm products has done little to dissuade civil society groups of their opposition to GMOs.

How are developing countries affected by this issue? Two ways in particular are worth noting: one is via the impact of the new technology in so far as it is lowering costs of food production; the other is via any food trade barriers that may be erected in response to consumer concerns in (mostly OECD) countries. The former would benefit those food-exporting developing countries able to attract the new technology, which places a premium on them having in place sound intellectual property law and enforcement (because seed companies would otherwise be wary of selling into or producing in such countries). If they cannot make productive use of the new biotechnologies, however, their competitiveness on international markets may be eroded as international food prices come down. Net food importing developing countries could benefit from that price fall (subject to the provisos discussed in the first section of this paper), and perhaps even more so if OECD countries ban imports of GMO products. The likely impact is clouded, however, by the fact that a premium might be attached to GMO-free products in international trade. This is clearly an area requiring more empirical economic research, ideally taking into account the impact of the new biotechnology on the competitiveness of the often-multinational input-supplying firms (to examine the extent to which such firms, rather than farmers or consumers, may capture the gains from the new technology).

While such agricultural issues will arise increasingly under the Uruguay Round's SPS and TBT agreements, they will also arise in other, non-agricultural-related contexts. As with state-trading, subsidies, and competition policies, there is a strong case for developing common disciplines for all types of products, whether agricultural or not. In the case of TBT, there is nothing special about food as compared with, say, dangerous chemicals or heavy metals involved in the production or disposal of manufactured goods. A key advantage of having a common set of rules

for risk analysis and risk management is that inconsistencies in current arrangements, and the problems that will keep causing for dispute settlement, would be reduced.

Agriculture's so-called multifunctionality

Considerable attention has been given in some OECD countries to the term 'non-trade concerns', which appears in Article 20(c) of the URAA. WTO members agreed that, in negotiating the continuation of the agricultural policy reform process after 1999, 'non-trade concerns' would be taken into account. While not spelt out in any detail, the preamble to the URAA defines those concerns to include security of food supplies and protection of the environment. A third concern is the viability of rural areas. The governments discussing these three items are characterizing them as positive externalities and in some cases public goods that are jointly produced along with food and fibre. Hence their use of the word 'multifunctionality' to describe these features of agricultural production.

Does agriculture deserve more price support and import protection than other sectors because of the non-marketed externalities/public goods it produces jointly in the process of producing marketable food and fibre? That is, do these unrewarded positive externalities exceed the negative externalities from farming by more than the net positive externalities produced by other sectors? If so, to what extent if any are those farmer-produced externalities under-supplied? And where there is under-provision, what are the most efficient ways to boost their production to the socially optimal levels?

So-called 'non-trade' concerns are becoming an issue in the WTO in numerous areas, not just with respect to agriculture. They are a direct consequence of the lowering or outlawing of trade barriers: with less natural and governmental protection from import competition, domestic policies are becoming relatively more important as determinants of the international competitiveness of certain industries. Despite their 'non-trade' adjective, these concerns need to be dealt with in the WTO because they certainly can affect trade. Ideally they should be handled in the same way for all sectors (for example, under an expanded Agreement on Subsidies and Countervailing Measures), but until that is done they cannot be ignored in the upcoming agricultural negotiations.

These concerns are not really new, but they are being packaged a little differently than in the past. A key question at stake is: do they require exceptional treatment, or are WTO provisions sufficient to cater for them, for example via the URAA's 'green box'? The short answer appears to be that WTO provisions are adequate for dealing with the main cases raised.

Both economic theory and policy practice have taught us at least five lessons of relevance to this issue. First, where there are several policy objectives, an equal number of policy instruments typically is required to deal efficiently with them. Second, the most efficient/lowest cost policy instrument or measure for achieving a particular objective (such as overcoming a market failure) will be that which addresses the concern most directly. Third, trade measures in particular are rarely the most efficient instruments for addressing 'non-trade' concerns. Fourth, trade reform will be welfare-improving so long as optimal domestic interventions are in place to deal with those 'non-trade' concerns. And fifth, whenever governments intervene in a market, even if it is to overcome a market failure, there is the risk of government failure – and that could be more welfare-reducing than the market failure the intervention is trying to offset. The government failure could result simply from there being insufficient information and analysis available to design an appropriate intervention (bureaucratic failure); or it could result from deliberate action at the political level aimed at rewarding particular groups covertly for their political support, even though that intervention may be costly to the community at large.

Every productive sector generates both marketed and non-marketed products. Some of those non-marketed products are considered more desirable than others, and some are considered undesirable. Since tastes and preferences change over time and differ between countries, so too will society's valuation of those non-marketed products. And as technologies, institutions, policy experiences and market sizes change in the process of development, so will the scope for being able to market some of those previously unmarketable products that were jointly produced with each sector's main products.

For a case to be made that farming should receive more assistance from government than other sectors, it needs to be demonstrated that agricultural production not only is a *net* contributor in terms of externalities and public goods, but also is *more* of a net contributor than other sectors and especially the sectors that would expand if agricultural supports were to shrink. Demonstrating that is an almost

impossible task, given the difficulties in obtaining estimates of society's ever-changing (a) evaluation of the myriad externalities and public goods generated by the economy's various sectors and (b) marginal costs of their provision. Hence the practice of intervening only in the most obvious situations requiring a correction.

Even if a clear case could be made for an intervention, the appropriate measure is unlikely to be import restrictions or output price supports for a broad range of marketed farm commodities. Rather, it will be a finely tuned measure to encourage the optimal extra amount of just the public-good or external aspect that has been under-supplied (or would be under *laissez faire*).

The policy task thus involves several steps: to get a sense of *society's willingness to pay* for the non-marketable by-product; to determine the *most efficient policy instrument* for encouraging farmers or others to supply that by-product for society; and then to determine the *optimal level of encouragement* so as to equate the marginal social benefit with the marginal social cost of that intervention, bearing in mind the risks associated with one or both forms of government failure identified above.

Some of the more-specific conclusions from a recent review of these issues (Anderson 1998) are worth stressing. First, several policy instruments will be necessary to address efficiently (which means directly and precisely) the numerous policy objectives encompassed in the 'non-trade' concerns. General agricultural price support programs are not among the efficient measures. This is true even of direct domestic supports, let alone indirect supports via import barriers or export subsidies (which also distort consumer prices), because – to use the surgical analogy – those instruments are far too blunt to efficiently achieve the specific objectives involved.

With respect to food security, the most efficient policy instrument for boosting it above that provided under free markets is probably subsidies to stockholding of staple foods. That is already allowed for in Annex 2 of the URAA. Import restrictions to boost self sufficiency, far from helping, may even diminish food security for vulnerable groups struggling to pay the high price of protected domestic food. And once bound tariffs are lowered to applied rates, greater stability in international food markets will prevail which will boost food security in all parts of the world.

Environmental protection has many facets and so requires a range of policy instruments. Reducing farm output price supports, as under the URAA, probably provides the single biggest potential contribution to the rural environment in

agricultural-protectionist OECD countries, through lowering the level and intensity of farm production. While those supports are still in the process of being phased down, there should be additional taxes, charges or other regulations on pollution from farm inputs to offset the extra damage caused by them via output price supports. Such input taxes are of course permitted under WTO rules. In so far as agriculture provides positive externalities or public goods, appropriate policies are de-coupled payments for their specific provision to the optimal level in each location (assuming that optimal level is above the level that would otherwise prevail, bearing in mind the marginal social cost of further provision). Since most of those goods can be provided independently of farming per se, de-coupling is not only possible but also desirable, because non-farmers may be able to provide some of those goods or services at lower cost than farmers. Some provision for such payments is made both in the URAA and in the WTO's Agreement on Subsidies and Countervailing Measures.

Ensuring the viability of rural areas also is a laudable goal, but again the blunt instrument of general farm product price supports is far from optimal, particularly since agriculture is not even the dominant source of income in many (particularly near-urban) rural areas. Far more appropriate are WTO-consistent targeted adjustment assistance (including re-training) packages and perhaps subsidies to essential services that would otherwise be withdrawn from strategic left-behind remote areas.

In short, WTO rules and URAA reform commitments are not at all incompatible with the adoption of efficient measures for addressing the so-called 'non-trade' concerns discussed above. There is plenty of synergy and no need for trade-offs between domestic policy objectives and agricultural protection reform objectives as embodied in WTO rules. However, it needs to be recognised that some re-instrumentation of farm support measures is inevitable and is already evident as traditional measures (tariffs, export subsidies and domestic price supports) are phased down. Getting a particular measure included on the list of 'green box' measures, in order for it to be excluded when calculating the Aggregate Measure of Support, will be a much sought-after prize by agricultural protectionist forces during the next round of WTO negotiations. Careful scrutiny of the grounds for such inclusions is likely to be a high payoff activity for developing country trade negotiators in the period ahead.

Both exporting and import-competing countries should welcome the call for closer scrutiny of instruments used for addressing 'non-trade' concerns. This is partly because once those superior instruments are identified and adopted at closer to

optimal levels, greater food security and environmental protection will result. But perhaps equally importantly, the current blunt instruments of support to farm product prices could then be dismantled more rapidly, as there would be even less reason to maintain them. Consumers, taxpayers and exporters of non-farm products in the countries protecting farmers, together with the world's more-efficient farmers, could then join with those anxious to conserve global resources in celebrating this improvement in the management of our economy and environment.

Conclusions and options for developing countries

The next WTO round has already been dubbed a 'development' round by several prominent EU spokespersons. This is partly a response to the disappointment expressed by developing countries in the extent to which they perceive they gained from the Uruguay Round, and partly a reflection of the fact that their weight in the WTO has grown considerably. Developing countries now comprise almost five-sixths of the WTO membership of 135, and that share is to continue rising as the 30 developing and transition economies currently in the midst of accession negotiations gradually complete that process, many before the end of the next round.

The millennium round thus offers probably the best prospects ever for developing countries in general – and their rural communities in particular -- to secure growth-enhancing reforms. In the mercantilist tradition of multilateral trade negotiations this will necessarily take the form of requests and offers, but it should be recognized that the so-called concessions that are offered are in fact beneficial to the economies making those reform offers: a win-win game in terms of nations' economic welfare.

Traditional agricultural market access liberalization should be the key priority issue in the next WTO round of multilateral trade negotiations, given the enormous potential for global and developing country welfare gains from reducing agricultural protection. Assurances are also needed that the EU and US will honour fully the spirit of their commitment to gradually expand market access for textiles and clothing, and not simply replace the remaining half of the quantitative restraints on trade in those products, expected to be still there at the end of 2001, with 'safeguard' measures by the end of the phaseout scheme three years later. Substantial progress in freeing up

more trade in both these sectors is essential if the next round is to be a genuine development round.

Such reform could boost enormously the earnings of the world's poor, the vast majority of whom are in rural households of developing countries. Rural households would benefit even in newly industrializing economies that take advantage of expanding opportunities to export textile products, for example through some of their household members moving to new jobs in nearby clothing factories.

From an agricultural development perspective, attention should focus also on reducing protection granted to other manufacturing and services industries. Protection in those sectors still bestows a significant anti-agricultural bias in many developing countries, making it more difficult for them to benefit from the agricultural and textile trade reforms of OECD countries. Those reforms can be done unilaterally, but the next WTO round offers an opportunity to obtain a quid pro quo, and can be a useful instrument through which to lock in such reforms domestically.

This next round will, however, be conducted in an environment in which globalization forces (including ever-faster development and international transfers of information, ideas, capital, skills and new technologies) will, by having ever-stronger impacts on domestic markets, simultaneously trigger insulationist policy reactions. For example, further reductions in traditional measures of farm protection will meet significant resistance in numerous OECD countries, as farm groups join with food safety and environmental groups to argue for new forms of agricultural protection.

In these circumstances the mercantilist nature of trade negotiations may require that the agenda of the next WTO round include not only other sectors but also some "new trade agenda" items such as investment and competition policies, so as to provide the potential for beneficial issue linkages and tradeoffs. Such new items may cause political and administrative difficulties in some developing countries, but they also create additional opportunities to secure domestic reforms that would boost their economies. Limited analytical and negotiating resources in developing countries make a number of them hesitant about having lots of new issues in the next round, to say the least. But developing countries may need to agree to discuss at least some of the new trade issues if they want to ensure agricultural (and textile) market access remains high on the WTO's agenda.

Given the apparent good will towards making this next WTO round a development round, and given that many developing countries have embraced major

reforms unilaterally during the past decade or so (Michaelopoulos 1999), perhaps developing countries should adopt a quite different approach from the past this time. Consideration might be given, for example, to exchanging more MFN market access with OECD countries rather than seeking special and differential (S&D) treatment and tariff preferences. S&D simply allows developing country governments to continue to keep shooting their economies in the foot by delaying beneficial reforms; and tariff preferences tend to divide developing countries into sub-groups, thereby weakening their individual and collective bargaining strength.

A striking example of the latter has been exposed in the prolonged and extremely costly dispute over access to the EU market for bananas. The EU policy regime involves layers of preferences that have divided developing countries into 'we' and 'they' groups and thereby weakened their chances of securing a better deal for all.

Another illustration of how preferential treatment has reduced the resolve of developing countries to push for OECD farm policy reform has to do with their food imports from the protectionist countries. Food export subsidies, export credits and non-emergency food aid all are by-products of OECD farm support programs. Without those programs most developing countries would be better off through expanded trade opportunities, and those that would not could be compensated with expanded access to OECD markets for tropical products and/or direct financial aid (which would be a far more efficient way of transferring resources to developing countries than doing it in kind as a way of disposing of surpluses).

With these examples in mind, would developing countries' interests be served by the new EU proposal for OECD countries to provide preferential access to exports of least-developed countries? If the things that matter (such as agricultural and textile products) were to be effectively excluded from such a deal, little of substance would be gained by the least-developed countries, and yet those countries would then feel less able to join other developing countries in seeking lower MFN tariffs on products of export interest to all developing countries. Meanwhile, OECD countries could use this initiative as an excuse for not reforming as much in the key areas.

All this suggests a potentially high payoff for developing countries acting collectively to push hard for greater market access for farm and textile products, and for technical and economic assistance to aid their reform processes, in return for providing more access to developing country markets for goods and services. The

political price of the latter offer is, after all, now much lower than it used to be: the forces of globalization are such that economies are now rewarded more, via inflows of foreign capital, for good domestic economic governance, but they are also penalized more if poor policy choices are not corrected. Two such corrections that would at the same time help the cause of reducing agricultural protection abroad would be for developing countries to commit to not using taxes or other restraints on agricultural exports, and to reduce their (often very high) ceiling bindings on their own import tariffs on farm products.

More-specific requests that developing countries might put on their wish-list include the following:

- remove tariffs on tropical (including processed) agricultural products,
- replace specific with ad valorem tariffs on imports of interest to developing country exporters, since the former (which apply to 42 per cent of US and EU agricultural tariffs) discriminate against products of lower quality and ones whose international price is declining through time,
- use the Swiss formula approach in making market access commitments, since that will reduce tariff peaks and escalation most,
- seek a firm phase-out date for agricultural TRQs, as was obtained for textiles and clothing in the Uruguay Round, but with limits on the extent to which safeguards can replace the quantitative restrictions at the end of the phase-out period,
- seek firm commitments, preferably written into OECD countries' schedules, on the extent of economic and technical assistance to cope with adjustment to reforms, especially for least-developed and net food-importing developing countries, and
- support the liberalization of trade in maritime services, given the potential for the cartelized OECD firms that own most of the liners to extract, via higher markups, much of the exporters' gain from goods trade liberalization.

Finally, what else should developing countries do to help their own reform processes complement those abroad? One obvious thing is to direct new economic and technical assistance funds towards reducing the under-investments in rural infrastructure (human as well as physical), agricultural research and development, and

agricultural technology transfer. Liberalizing foreign investment rules and improving intellectual property law enforcement would enhance the prospects for both transfers of new biotechnologies and their further development locally. And removing domestic disincentives to farmers in the form of agricultural export taxes, manufacturing protection, and over-valued exchange rates remain essential.

Appendix

Effects of imposing a tariff rate quota regime on the domestic price, trade and welfare of a food-importing economy

Consider an economy that imports an agricultural product imposes a tariff rate quota (TRQ) regime under the rules of the Uruguay Round Agreement on Agriculture (URAA). That involves setting a bound tariff (typically more than the tariff actually applied) on out-of-quota sales and a lower in-quota tariff for a specified volume of imports. As is clear from Table 1, the extent of the difference between those two tariff rates for various products and OECD countries is considerable.

The initial impact of imposing such a TRQ regime is depicted in Figure 1 where this economy's import demand curve for the product is line D. For simplicity, the economy is assumed to be a sufficiently small player in the global market for this product that its imports do not affect the international price, and its in-quota tariff is assumed to be zero, in which case the quota volume, Q , is imported at the international price P^* .

If this was an import quota regime (now illegal under WTO), the domestic price would be P_q and the national economic welfare loss from restricting imports to Q , instead of allowing the free-trade volume Q^* , would be area abc plus a percentage of the potential quota rent which is area $bcde$. What that latter percentage is depends on how the import licenses are administered: it is zero only if all licenses go to domestic firms and those firms are allowed to import from the lowest-cost suppliers abroad. (By contrast, if say only Q_2 of the Q units were allocated to domestic firms, the national welfare loss would be greater by area $bcrj$.)

It is possible to achieve the same outcome under a TRQ regime as under a traditional import quota. In terms of Figure 1, all that is required is to set the out-of-quota applied tariff (and therefore the bound rate) at $P_q - P^*$ per unit or more.

Only if the out-of-quota applied tariff is set at a value of less than $P_q - P^*$ per unit would there be any out-of-quota imports under a TRQ regime. If the applied rate was set at the specific rate of t_1 per unit, for example, the domestic price would be $P^* + t_1$ and an additional $Q_1 - Q$ units would be imported. Compared with a prohibitive out-of-quota tariff, this would generate less potential quota rent (lower by area $cdhg$) but would cause domestic consumer surplus net of domestic producer surplus to be higher by area $cdhf$, and tariff revenue of area $fgbn$ would be collected by the government. Hence net economic welfare would be greater by area $fcbn$ as compared with no out-of-quota imports, again assuming all licenses go to domestic firms and those firms are free to source imports from the lowest-cost suppliers abroad.

If some licenses are made valid only for imports from high-cost foreign suppliers (as applies for some products under the European Union's Lome Convention, for example), this importing economy's welfare would be further reduced. It could be reduced by even more than the maximum quota rent for volume Q (area $bcde$). Suppose, for example, the licenses are restricted to imports from a set of countries whose export supply curve measured at cif prices is line S. Even if the out-of-quota applied tariff was more than t_2 , those foreign suppliers could afford to export only Q_2 units to this economy, causing the domestic price to be $P^* + t_2$ rather than P_q because of the quota being underfilled by $Q - Q_2$ units. In this case there would be no quota rents, and the net economic welfare cost of imposing such a TRQ regime would be much larger than described in the previous two paragraphs.

Specifically, compared with free trade, the welfare cost of this regime would be area *aemk*, regardless of whether the licenses are allocated to domestic or foreign firms, whereas the cost of the regimes described in paragraphs one and two are potentially just areas *abc* and *anf*, respectively. To that needs to be added the cost to government of administering the license allocation system and the lobbying costs of firms seeking a share of those licenses.

Effect of an international price fall

If the international price of this product were to fall -- as it has during the implementation of the Uruguay Round -- the nominal rate of protection (the percentage by which the domestic producer price exceeds the border price) would remain constant under an ad valorem tariff regime but would rise under a specific tariff regime. However, it would rise even more under a TRQ regime if the out-of-quota tariff had been prohibitive (i.e., above $P_q - P^*$ per unit). Indeed if $P^* + t_2$ was above P_q by more than the fall in the international price, the import volume and domestic price would remain unchanged despite that price fall. It is thus possible that even though agricultural producer supports were supposed to decline during the implementation of the Uruguay Round though cuts in bound tariffs (as well as producer and export subsidies) plus growth in TRQ volumes, protection levels may have increased in some cases because of a more-than-offsetting fall in international food prices since 1995.

Effects of a new commitment to lower the bound tariff

Suppose at the end of the URAA implementation period this economy commits itself to lower its bound tariff on this product. If a tariff-only regime was in place, the impacts of that reform would be somewhere between zero and 100 per cent of the impacts of an equally large cut in the applied tariff, depending on the extent to which the bound rate exceeds that applied rate. (The proportion starts to rise above zero only after the bound rate reaches the applied rate.) In the presence of a TRQ regime, however, the impacts are even smaller if the out-of-quota tariff is still prohibitive. Indeed even if licenses were held by domestic firms and imports were sourced from the most efficient suppliers, there would be no impact at all from that reform commitment if the cut in the bound rate was insufficient to bring the applied tariff down to less than $P_q - P^*$ in Figure 1. The maximum impacts are possible only if the out-of-quota applied tariff is not prohibitive, *and* the bound rate is not above the applied rate.

If there were (a) restrictions on sourcing from lowest-cost suppliers, and/or (b) only some of the quota (say Q_2) was allocated to domestic firms, the welfare gains from bringing the applied tariff down to a non-prohibitive level would be substantially greater than without those features of quota administration. For example, if the tariff was reduced from more than t_2 to t_1 , there would be an additional gain of (a) area *bemkc* if the requirement on domestic firms to source from high-cost imports along curve *S* was removed, and (b) area *gcru* if only Q_2 of the quota licenses were in the hands of domestic firms.

Effects of a new commitment to expand the quota

Even more than a commitment to lower the bound tariff, a commitment to expand the quota could have anything between zero and more than 100 per cent of the standard impact described in textbooks. If the quota had not been administered frictionlessly in the past and had not been fully allocated to domestic firms, and there were changes in favour of domestic importers as part of the new commitment, the economy's actual welfare gain could exceed the maximum gain normally estimated for a quota increase.

Conclusions

The following conclusions can be drawn from the above:

- TRQs add considerable complexity to modeling empirically even the domestic impacts of agricultural trade policies and their reform;
- in the presence of TRQs the national welfare cost of agricultural protection can be considerably greater than what a given domestic-to-border price wedge would imply if a tariff-only regime prevailed;
- a fall in the border price of the product causes that cost of protection to rise if a TRQ regime with a prohibitive out-of-quota tariff is in place, and by more than if a specific tariff alone is used;
- modeling an x per cent cut in the bound tariff as if it is a cut of that size in the applied rate can overstate the price and quantity effects of reform not only because the bound rate exceeds the applied rate but also because the applied rate is above the prohibitive tariff in the presence of the quota, such that the actual effects could range (in a non-linear, double-kinked fashion) from anything between zero to 100 per cent of the modeled effects;
- the modeled effects of a tariff cut on national welfare, by contrast, could understate or overstate the gains from further reform, depending on how the quota is being administered before and after the next reform;
- an expansion of the market access (quota) commitment need not ease this measurement problem, for it is always possible for the quota administrator to allocate those quotas so as to ensure under-fill such that no more or even less imports in total flow in; and
- modeling the effects of the TRQ regime, and changes to it, on bilateral trade flows and thereby on the welfare of this economy's trading partners also is more complex than modeling their effects under a tariff-only regime, with in-quota and out-of-quota tariff preferences for some trading partners adding further complications for modelers.

Models such as GTAP are in principle capable of handling these complications though careful additional programming, but to generate reliable numbers requires also assimilating a much greater volume of policy data than is required when a simple tariff-only regime exists. Until all those data are collected and added appropriately to the model's database, modeling the effects of an x per cent cut in the bound tariff will necessarily generate upper-bound estimates of price and quantity effects, the true impacts being somewhere between those from the model and zero. But it is possible that modelers may *under-estimate* rather than over-estimate the *welfare* effects of reform, depending on the way the quotas are administered before and after the next round of commitments.

References

- Anderson, K. (1998), 'Domestic Agricultural Policy Objectives and Trade Liberalization: Synergies and Trade-offs', COM/AGR/CA/TD/WS(98)101, in Proceedings of the OECD Workshop on Emerging Trade Issues in Agriculture (Paris, 25-26 October 1998), published on the OECD's website at www.oecd.org/agr/trade/.
- Anderson, K., B. Dimaranan, T. Hertel and W. Martin (1997), 'Economic Growth and Policy Reforms in the APEC Region: Trade and Welfare Implications by 2005', *Asia-Pacific Economic Review* 3(1): 1-18, April 1997.
- Anderson, K., J. Francois, T. Hertel, B. Hoekman, and W. Martin (2000), *Benefits from Trade Reform in the New Millennium*, London: Centre for Economic Policy Research (forthcoming).
- Anderson, K. and Y. Hayami (1986), *The Political Economy of Agricultural Protection*, Boston, London and Sydney: Allen and Unwin.
- Anderson, K., B. Hoekman and A. Strutt (1999), 'Agriculture and the WTO: Next Steps', paper presented to the Second Annual Conference on Global Economic Analysis, Helnaes, Denmark, 20-22 June.
- Anderson, K. and A. Strutt (1999), 'Impact of East Asia's Growth Interruption and Policy Responses: The Case of Indonesia', *Asian Economic Journal* 13(2), September (forthcoming).
- Anderson, K. and R. Tyers (1993), 'More on Welfare Gains to Developing Countries from Liberalising World Food Trade', *Journal of Agricultural Economics* 44(2): 189-204, May.
- Cottier, T. and P.C. Mavroidis (eds.) (1998), *State Trading in the Twenty-First Century*, Ann Arbor: University of Michigan Press.
- Elbehri, A., M. Ingo, T. Hertel and K. Pearson (1999), 'Agricultural Liberalization in the New Millennium', paper to be presented at the WTO/World Bank conference on Agriculture and the New Trade Agenda from a Development Perspective, Geneva, 1-2 October.
- Finger, J.M. and L. Schuknecht (1999), 'Market Access Advances and Retreats: The Uruguay Round and Beyond', paper presented at the Annual World Bank Conference on Development Economics, Washington, D.C., April.
- Francois, J.F. (1999a), 'Approaches to Agricultural Policy Model Construction', paper presented at the UNCTAD workshop on Agricultural Policy Modeling, Geneva, 24-25 March.
- Francois, J.F. (1999b), 'Market Access Liberalization in the WTO 2000 Negotiations', paper to be presented at the WTO/World Bank conference on Agriculture and the New Trade Agenda from a Development Perspective, Geneva, 1-2 October.
- Francois, J.F. and W. Martin (1998), 'Commercial Policy Uncertainty, the Expected Cost of Protection, and Market Access', Discussion Paper, Tinbergen Institute, Erasmus University, May.
- Francois, J.F. and I. Wooten (1999), 'Trade in International Transport Services: The Role of Competition', paper presented at the First Annual Conference of the European Trade Study Group, Erasmus University, Rotterdam, 24-26 September (www.etsg.org/etsg/detailedprogram.htm).
- Grossman, G.M. and E. Helpman (1995), 'Trade Wars and Trade Talks', *Journal of Political Economy* 103(4): 675-708, August.

- Henson, S. (1998), 'Regulating the Trade Effects of National Food Safety Standards', OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 25-26 October, <http://www.oecd.org/agr/trade/>.
- Hertel, T.W. (ed.) (1997), *Global Trade Analysis: Modeling and Applications*, Cambridge and New York: Cambridge University Press.
- Hertel, T.W., and W. Martin (1999), 'Developing Country Interests in Liberalizing Manufactures Trade', paper presented at the WTO/World Bank's Conference on Developing Countries in a Millennium Round, Geneva, 19-20 September.
- Hillman, A.L. and P. Moser (1995), 'Trade Liberalization as Politically Optimal Exchange of Market Access', in *The New Transatlantic Economy*, edited by M. Canzoneri et al., Cambridge: Cambridge University Press.
- Hudec, R.E. (1998), 'Does the Agreement on Agriculture Work? Agricultural Disputes After the Uruguay Round', IATRC Working Paper #98-2, Department of Applied Economics, University of Minnesota, April.
- Ingco, M.D. (1996), 'Tariffication in the Uruguay Round: How Much Liberalization?' *The World Economy* 19(4): 425-47, July.
- Ingco, M.D. (1997), 'Has Agricultural Trade Liberalization Improved Welfare in the Least-Developed Countries? Yes', Policy Research Working Paper 1748, World Bank, Washington, D.C., April.
- Ingco, M.D. and F. Ng (1998), 'Distortionary Effects of State Trading in Agriculture: Issues for the Next Round of Multilateral Trade Negotiations,' Policy Research Working Paper 1915, World Bank, Washington, D.C..
- James, S. and K. Anderson (1998), 'On the Need for More Economic Assessment of Quarantine Policies', *Australian Journal of Agricultural and Resource Economics* 41(4): 525-44, December.
- Josling, T., S. Tangermann and T.K. Warley (1996), *Agriculture in the GATT*, London: Macmillan and New York: St Martin's Press.
- Mahe, L.P. and F. Ortalo-Magne (1998), 'International Co-operation in the Regulation of Food Quality and Safety Attributes', in Proceedings of the OECD Workshop on Emerging Trade Issues in Agriculture, Paris, 25-26 October (<http://www.oecd.org/agr/trade/>).
- Michaelopoulos, C. (1999), 'The Integration of Developing Countries into the Multilateral Trading System', mimeo, World Bank and WTO Secretariat.
- Roberts, D. (1998), 'Implementation of the WTO Agreement on the Application of Sanitary and Phytosanitary Measures: The First Two Years', Working Paper #98-4, Department of Applied Economics, University of Minnesota, May.
- Roberts, D. and K. DeRemer (1997), 'Overview of Foreign Technical Barriers to U.S. Agricultural Exports', ERS Staff Paper No. 9705, Washington, D.C.: U.S. Department of Agriculture, March.
- Schiff, M. and A. Valdes (1992), *The Political Economy of Agricultural Pricing Policy: Vol. 4, A Synthesis of the Economics in Developing Countries*, Baltimore: Johns Hopkins University Press.
- Skully, D. (1999), 'The Economics of TRQ Administration', IATRC Working Paper #99-6, St Paul: University of Minnesota, May.
- Snape, R.H. (1987), 'The Importance of Frontier Barriers', in H. Kierzkowski (ed.) *Protection and Competition in International Trade*, Oxford: Basil Blackwell.
- Stillwell, M. and B. Van Dyke (1999), 'An Activist's Handbook on Genetically Modified Organisms and the WTO', Center for International Environmental Law, Washington, D.C. and Geneva, March (www.consumerscouncil.org/ccp/policyhandbk399.htm).

- Tangermann, S. and T. Josling (1999), 'The Interests of Developing Countries in the Next Round of WTO Agricultural Negotiations', paper presented at the UNCTAD workshop on Developing a Proactive and Coherent Agenda for African Countries in Support of their participation in International Trade Negotiations, Pretoria, 29 June to 2 July.
- Tyers, R. and K. Anderson (1992), *Disarray in World Food Markets: A Quantitative Assessment*, Cambridge and New York: Cambridge University Press.

Table 1: Depth of Uruguay Round tariff cuts and post-UR bound and applied tariffs on imports, by sector and region

	Depth of UR cut in bound tariff rate t (as % of $1 + t$)	Post-UR bound tariff rate (%)	Post-UR applied tariff rate (%)	Depth of cut needed in bound tariff rate t (as % of $1 + t$) to bring it down to sector's post-UR applied rate	Proportional cut needed in bound tariff rate t (as % of t) to bring it down to region's post-UR average applied rate
<i>ARGICULTURE</i>					
OECD countries	1.5	15	14	0.9	83
Developing economies	4.7	60	18	26.3	78
All WTO members	2.6	24	14	8.1	82
<i>TEXTILES & CLOTHING</i>					
OECD countries	1.4	11	8	2.7	76
Developing economies	4.1	24	21	2.4	45
All WTO members	1.6	12	10	1.8	53
<i>OTHER MANUFACTURES</i>					
OECD countries	1.0	4	3	1.0	35
Developing economies	2.7	20	13	5.8	34
All WTO members	1.3	6	4	1.9	35

Source: Finger and Schuknecht (1999).

Table 2: In-quota and out-of-quota tariff rates and estimated maximum TRQ quota rents, selected agricultural products and OECD countries, 1996

	<i>In-quota ad valorem Tariff, %</i>	<i>Out-of-quota ad valorem Tariff, %</i>	<i>Maximum quota rents (\$US billion)</i>	<i>Quota fill ratio, %</i>	<i>Quota As a % of total imports</i>
European Union					
Wheat	0	87	0.0	21	2
Grains	35	162	0.4	74	26
Sugar	0	147	2.4	100	87
Dairy	24	91	1.1	99	80
Meats	19	128	2.3	100	73
Fruits & vegetables	11	51	0.0	78	20
United States					
Sugar	2	129	1.0	97	76
Dairy	11	70	0.6	77	95
Meats	5	26	0.0	67	102
Canada					
Wheat	1	49	0.0	27	218
Grains	1	58	0.0	5	2400
Dairy	7	262	0.3	100	75
Meats	2	27	0.0	124	72
Japan					
Wheat	0	234	3.4	109	95
Grains	0	491	10.8	109	84
Dairy	29	344	2.8	93	91
Korea					
Rice	5	89	0.0	100	53
Grain	3	326	1.9	148	61
Oilseeds	8	545	0.0	157	62
Dairy	21	106	0.0	85	106
Meats	40	42	0.4	97	77
Fruits & vegetables	47	305	0.0	99	83

Source: Elbehri, Ingco, Hertel and Pearson (1999).

Table 3: Sectoral and regional contributions to the economic welfare gains^a from completely removing trade barriers globally, post-Uruguay Round, 2005

(a) in 1995 US\$ billions

Liberalizing Region: <i>Benefitting region:</i>	Agriculture and Food	Other Primary	Textiles & Clothing	Other Manufactures	Total
High Income					
<i>High Income</i>	110.5	-0.0	-5.7	-8.1	96.6
<i>Low Income</i>	11.6	0.1	9.0	22.3	43.1
Total	122.1	0.0	3.3	14.2	139.7
Low Income					
<i>High Income</i>	11.2	0.2	10.5	27.7	49.6
<i>Low Income</i>	31.4	2.5	3.6	27.6	65.1
Total	42.6	2.7	14.1	55.3	114.7
All Countries					
<i>High Income</i>	121.7	0.1	4.8	19.6	146.2
<i>Low Income</i>	43.0	2.7	12.6	49.9	108.1
Total	164.7	2.8	17.4	69.5	254.3

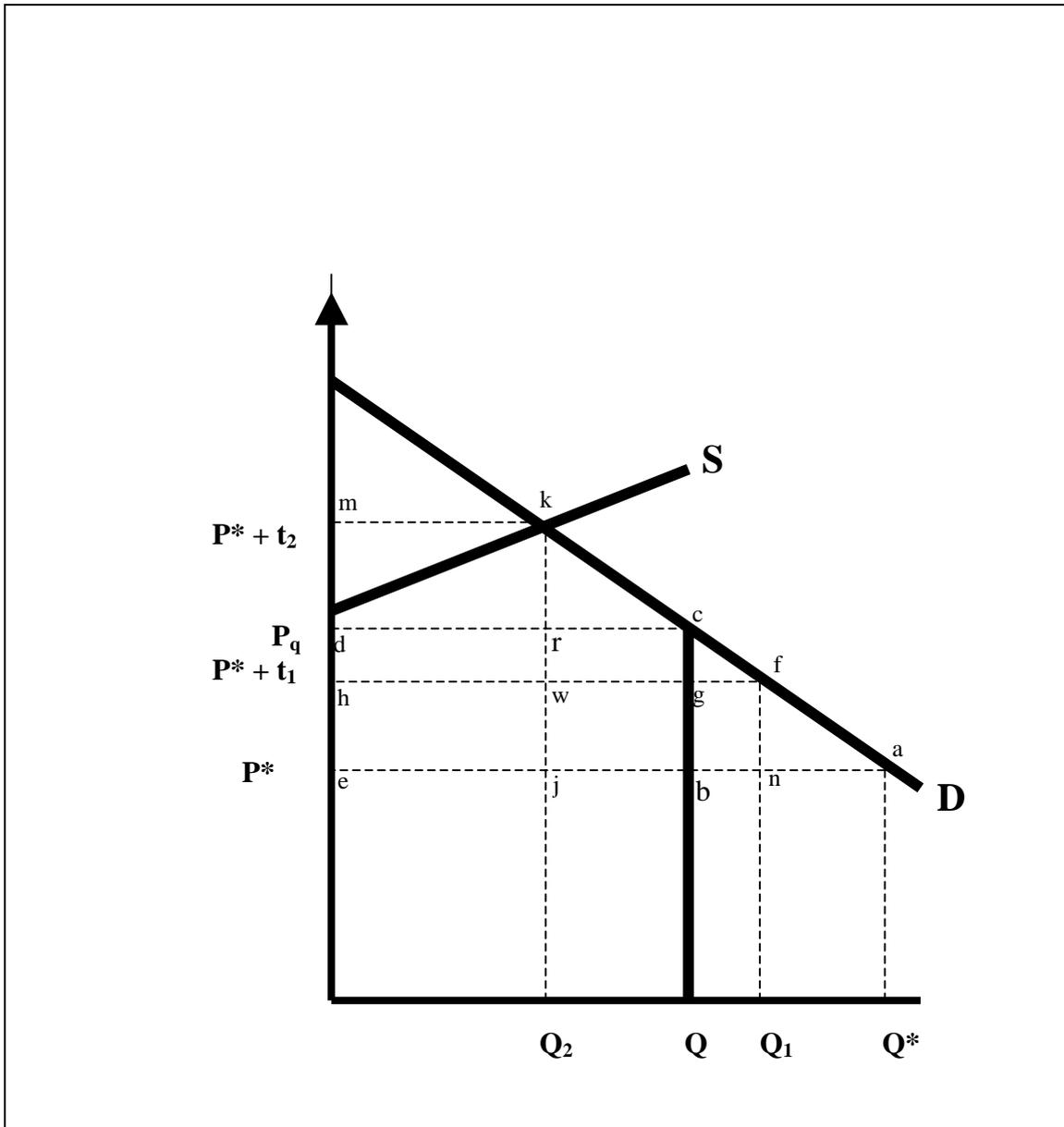
(b) in per cent of total global gains

Liberalizing Region: <i>Benefitting region:</i>	Agriculture and Food	Other Primary	Textiles & Clothing	Other Manufactures	Total
High Income					
<i>High Income</i>	43.4	0.0	-2.3	-3.2	38.0
<i>Low Income</i>	4.6	0.1	3.5	8.8	16.9
Total	48.0	0.0	1.3	5.6	54.9
Low Income					
<i>High Income</i>	4.4	0.1	4.1	10.9	19.5
<i>Low Income</i>	12.3	1.0	1.4	10.9	25.6
Total	16.7	1.1	5.5	21.7	45.1
All Countries					
<i>High Income</i>	47.9	0.1	1.9	7.7	57.5
<i>Low Income</i>	16.9	1.0	4.9	19.6	42.5
Total	64.8	1.1	6.8	27.3	100.0

^a No account is taken in these calculations of the welfare effects of environmental changes associated with trade liberalization, which could be positive or negative depending in part on how environmental policies are adjusted following trade reforms.

Source: Provisional GTAP modeling results to appear in final form in Anderson et al. (forthcoming 2000).

Figure 1: Domestic price, trade and welfare effects of an agricultural tariff rate quota regime on a small economy



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