CHAPTER 9

Agricultural trade, trade policies and the global food system

9.1 Introduction

For centuries countries have relied on trade in agricultural and food commodities to supplement and complement their domestic production. The uneven distribution of land resources and the influence of climatic zones on the ability to raise plants and animals have led to trade between and within continents. Historical patterns of settlement and colonization contributed to the definition of trade patterns and to the emergence of an infrastructure to support such trade. More recently, transnational firms with global production and distribution systems have taken over from post-colonial trade structures as a paradigm for the organization of world agricultural trade. Changes in consumer taste have encouraged the emergence of global markets and added to the significance of trade. Few countries could survive the elimination of agricultural trade without a considerable drop in national income, and none could do so without considerable reduction in consumer choice and well-being.

The projections presented in Chapter 3 suggest that the role of trade in meeting global food demand will further increase over the next 30 years. Developed countries will provide a growing share of developing countries' food needs, and in return will continue to import larger quantities of other agricultural products, notably tropical beverages, rubber and fibres. However, the developing countries are not a homogenous trading bloc. While the group as a whole will increase its net exports of tropical products and import more and more temperate-zone commodities, within the group there will remain important net exporters of temperate-zone commodities.

Like all projections, the global trade outlook presented in this chapter is based on numerous assumptions about the likely evolution of policies that will affect trade flows, as well as basic trends in income, population and productivity. A principal premise of the quantitative projections is the continuation of existing policies related to the support and protection of agriculture, including policy changes that will be implemented in the future, for example, the EU's Everything but Arms Initiative (EBA) that foresees a liberal import regime for rice and sugar from the least developed countries (LDCs) in the future. If policies differ substantially in the future, so will the outcomes. If, for instance, the reform process that began under the Uruguay Round Agreement on Agriculture were to achieve a fundamental reform of the sector, and if there were significant reductions in production-enhancing subsidies and protection in industrial countries, this could have an impact on predicted trading

patterns. And if policy reforms extended beyond the developed countries and led to the removal of the remaining bias against agriculture in the policy of several developing countries, this could mobilize resources to enhance productivity and stimulate development of the rural economy.[1] As a consequence, much of the qualitative discussion in the chapter is an attempt to indicate how policies might develop over the next three decades.

This chapter begins with a discussion (Section 9.2) of the evolution of patterns in global agricultural trade. The analysis reviews the changing share of agricultural trade relative to manufactures in world trade and identifies the rapidly changing role of agricultural trade in the developing countries. This is followed by a discussion of the agricultural trade balances for developing countries by major commodity categories. It shows changes in the net trade balances of these product categories. It also provides an overview of complementarity and competition in global agricultural trade and how, where, and to what extent policies have affected the current trading patterns between developing and developed countries.

Section 9.3 examines the trade policy environment, focusing on the Agreement on Agriculture. It assesses the progress made to create a "fair and market-oriented" trading system for agriculture, and looks at other trade policy developments in agriculture, particularly the role of preferential and regional trade agreements. Section 9.4 addresses the prospects for and likely impacts of further reforms in the current and future rounds of negotiations, with particular attention to the ways in which the new emphasis on non-trade concerns will influence trade liberalization. This is followed by an analysis of how different policy options could affect and alter the baseline projections to 2030. The focus is on the stake of developing countries in international agricultural trade policy reform. The chapter concludes (Section 9.5) by looking at the emerging issues that will affect the overall trade policy environment and how they may influence agricultural trade in the coming three decades.

9.2 Long-term trends in the pattern of global agricultural trade

9.2.1 From agricultural exports to manufactures exports

The last 50 years have witnessed an impressive growth in international trade. The volume of global merchandise trade has increased 17-fold, more than three times faster than the growth in world economic output.

A number of factors contributed to this growth. Average import tariffs on manufactures, for instance, fell from 40 to 4 percent over the four decades of trade negotiations under the General Agreement on Tariffs and Trade (GATT) (Abreu, 1996). Non-policy factors have also been important, including a reduction in transport costs and new transportation facilities as well as cheaper and more efficient communications. Moreover, growth in manufactures trade has been spurred by the rapid expansion of intra-industry and intrafirm trade, exploiting a division of labour within companies operating across various countries or continents. Much of this trade is an exchange of components or semi-processed products. Finally, manufactures benefited from a virtuous circle whereby the gains from trade translated into higher incomes and in turn fuelled growth in trade.

Agricultural trade has also grown during the last 50 years, but only at about the rate of global economic output. Notable among the factors that contributed to this relatively slow growth in trade was the failure to include agriculture fully in the multilateral trade negotiations under GATT that were so successful in reducing industrial tariffs. As a result, agricultural tariffs are as high now, on average, as industrial tariffs were in 1950. The effects of high border protection have been compounded by domestic support policies in many developed countries and in some developing countries by policies that promoted import substitution at the expense of international trade.

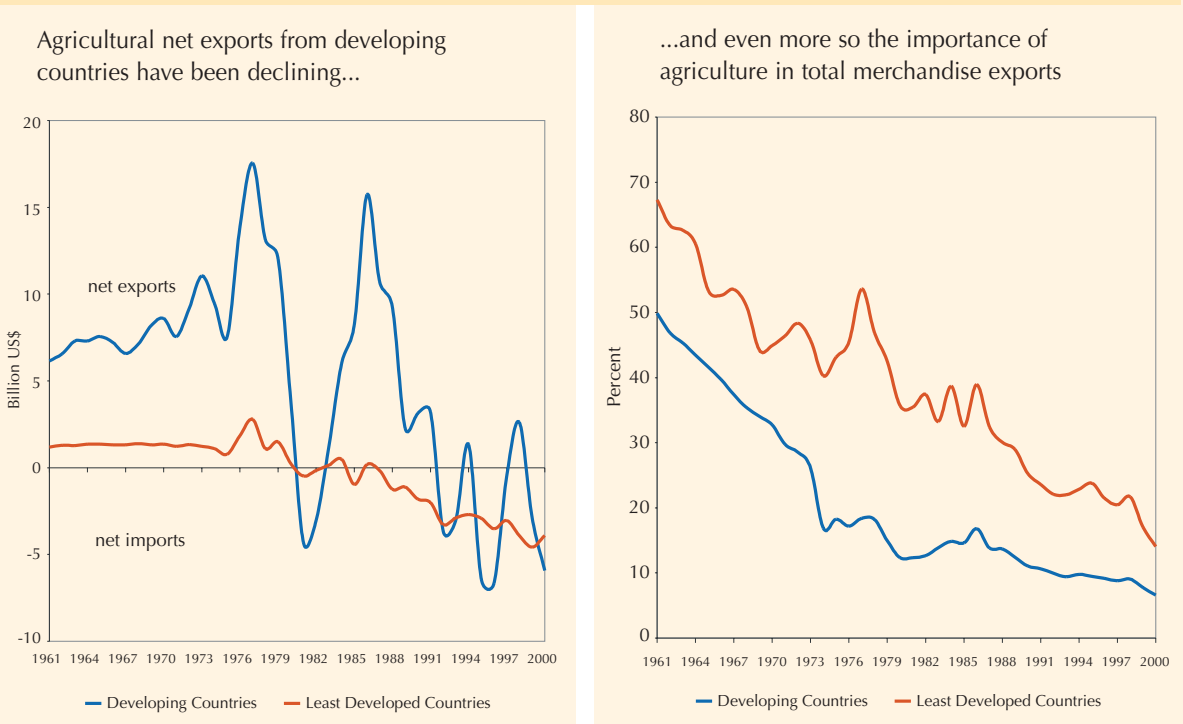
[1] As discussed in Chapter 10, many countries ran policies that were implicitly or explicitly biased against their agricultural sector. While some of this bias appears to have been removed in the course of domestic policy reforms and structural adjustment programmes, the patterns of government investment still favour urban areas in many countries.

Growth in agricultural exports from developing countries was also held back by the limited absorption capacity of their export markets. The major part of their agricultural exports was destined for largely saturated developed country markets without much responsiveness in demand. Tropical products such as coffee, cocoa, tea or rubber were most severely affected by these limitations. Rising output from developing countries met inelastic demand in developed countries and resulted in a persistent downward pressure on prices. In fact, lower prices cancelled out much of the gains in export volumes with the result that export earnings increased only moderately.

Moreover there has been very little intra-industry or intrafirm trade in food and agricultural products. This reflects mainly the nature of agricultural trade, which is often largely determined by different agro-ecological conditions. But intra-industry trade has also been held back by traditional trade and investment barriers that made international sourcing more difficult than for manufactures. When and where these barriers have declined, the exchange of processed and semi-processed agricultural products has increased considerably and brought about levels of intra-industry/intrafirm trade close to levels observed for non-agricultural products (see Chapter 10). Much of this trade has been stimulated by the activities of global food companies and traders, but has also involved retailers and small food exporters exploiting niche markets.

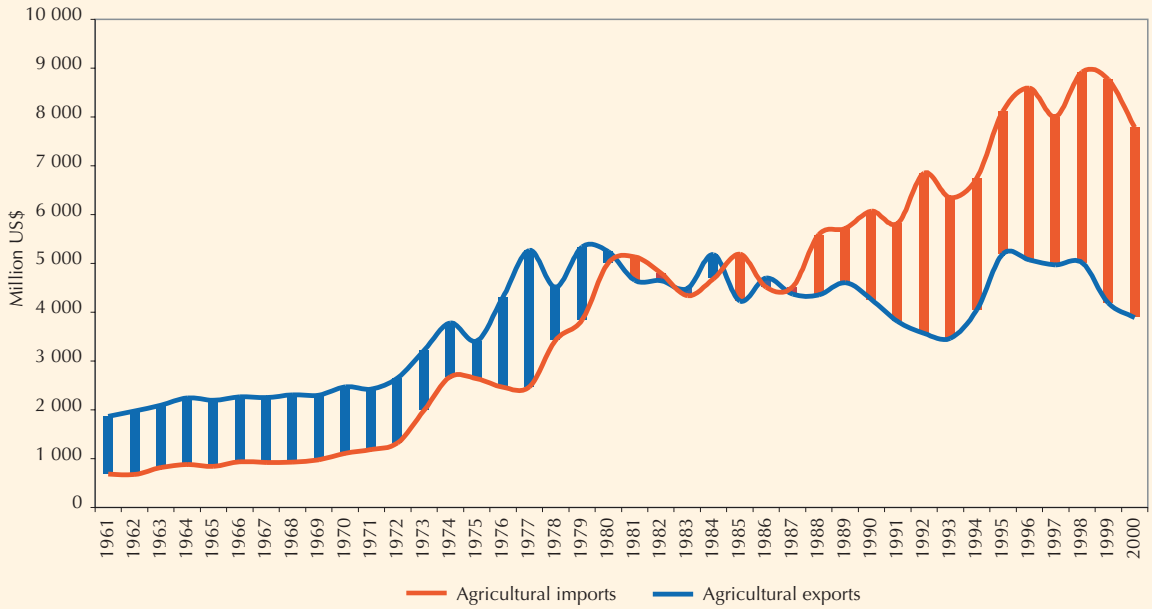
The result of the rapid export growth in manufactures and slow growth in agricultural exports was a dramatic decline in the relative importance of agricultural exports. The share of developing countries' agricultural exports in their overall exports fell from nearly 50 percent at the beginning of the 1960s to barely more than 5 percent by 2000[2] (Figure 9.1). Even for the group of the 49 LDCs, where agriculture is often the largest sector of the economy, the share of agricultural exports declined from more than 65 percent in the early 1960s to less than 15 percent by 2000 (Figure 9.1). Whereas the low shares for developing countries are, among many other factors, also a reflection of protectionist policies in OECD countries, OECD policies have probably contributed to

Figure 9.1 The agricultural trade balance and share of agricultural exports



2 Both for agriculture and total merchandise trade, gross trade data include intradeveloping country trade.

Figure 9.2 Least developed countries (LDCs) have become major net importers of agricultural products



keeping shares high for the LDCs. The numerous preference agreements in which they participate offer the LDCs higher export prices and encourage them to export more than otherwise.

9.2.2 From net exporters to net importers of agricultural commodities

Together with the overall decline in the share of agriculture in international trade, the structure of agricultural trade has changed markedly. One manifestation of this change is the balance in food trade between developed and developing countries. In 1961/63 developing countries as a whole had an overall agricultural trade surplus of US$6.7 billion, but this gradually disappeared so that by the end of the 1990s trade was broadly in balance, with periodic minor surpluses and deficits. The outlook to 2030 suggests that the agricultural trade deficit of developing countries will widen markedly, reaching an overall net import level of US$31 billion. Net imports of food will increase to about US$50 billion (in US$ of 1997/99, for details see Table 9.1).

The 49 LDCs have been in the forefront of this shift: their agricultural trade deficit has increased so rapidly that, already by the end of the 1990s, imports were more than twice as high as exports (Figure 9.2). The outlook to 2030 suggests that this trend will show no sign of abating. The agricultural trade deficit of the group of LDCs is expected to widen further and will increase overall by a factor of four over the next 30 years.[3]

As already discussed in Chapter 3, the evolution of the overall net agricultural trade balance *per se* may not necessarily represent a deterioration of the overall economic situation in a developing country. For some countries, a growing agricultural trade deficit may simply reflect rapid overall development. This is, for instance, the case of countries such as the Republic of Korea in which the growing agricultural deficit has gone hand in hand with high rates of overall development and growing food consumption. Likewise, rising imports of vegetable oil in China primarily reflect an improved ability to meet domestic food needs through imports. A declining agricultural

[3] The increase in the trade deficit is expressed in constant international dollars. For the commodities covered in this study, it is projected to widen from about US$4 billion in 1997/99 to US$8.5 billion in 2015 and US$16.6 billion in 2030, respectively. The country composition of the group of LDCs has been assumed to remain unchanged.

trade balance is, however, a negative developmental outcome in countries that continue to depend to a high degree on export earnings from agriculture or that have to divert scarce foreign exchange resources (eventually building up unsustainable foreign debt) to pay for growing food imports. It is an even more negative indicator where such food imports are not associated with rising food consumption per capita but are necessary just to sustain minimum levels of food consumption.

Commodity dependence. Notwithstanding the declining importance of agricultural exports for developing countries as a whole, some developing countries still rely heavily on agricultural exports for their foreign exchange earnings. In more than 40 developing countries, the proceeds from exports of a single agricultural commodity such as coffee, cocoa or sugar account for more than 20 percent of total merchandise export revenue and more than 50 percent of total agricultural export revenue (Figure 9.3). In Burundi, for example, coffee exports alone accounted for 75 percent of the country's foreign exchange earnings in 1997/99. Half of these countries are located in sub-Saharan Africa, and three-quarters are LDCs and/or small islands. The heavy reliance on a few crops is often a reflection of the fact that many of these economies are very small.

Dependence on a few commodities brought about numerous problems for these countries during the period of low prices in 1999/2001. Particularly low world prices for coffee and sugar reduced their overall foreign exchange availability, lowered rural wages, increased rural poverty and thus underlined the importance of undistorted agricultural trade for overall economic development. The sluggish demand for primary agricultural commodities and the recurring conditions of boom and bust in their exports created problems for commodity-dependent economies. Unstable commodity prices and export earnings are known to make development planning more difficult and to generate adverse short-term effects on income, investment and employment.

9.2.3 Projected shifts in the agricultural trade balance of developing countries

The outlook is that developing countries will become significant net importers, with a trade deficit of almost US$35 billion by 2030 (Table 9.1).[4] The following section focuses on the structural changes within agricultural trade by commodity group, to identify the main factors that have brought about these shifts in trade patterns and the likelihood of their continuation.

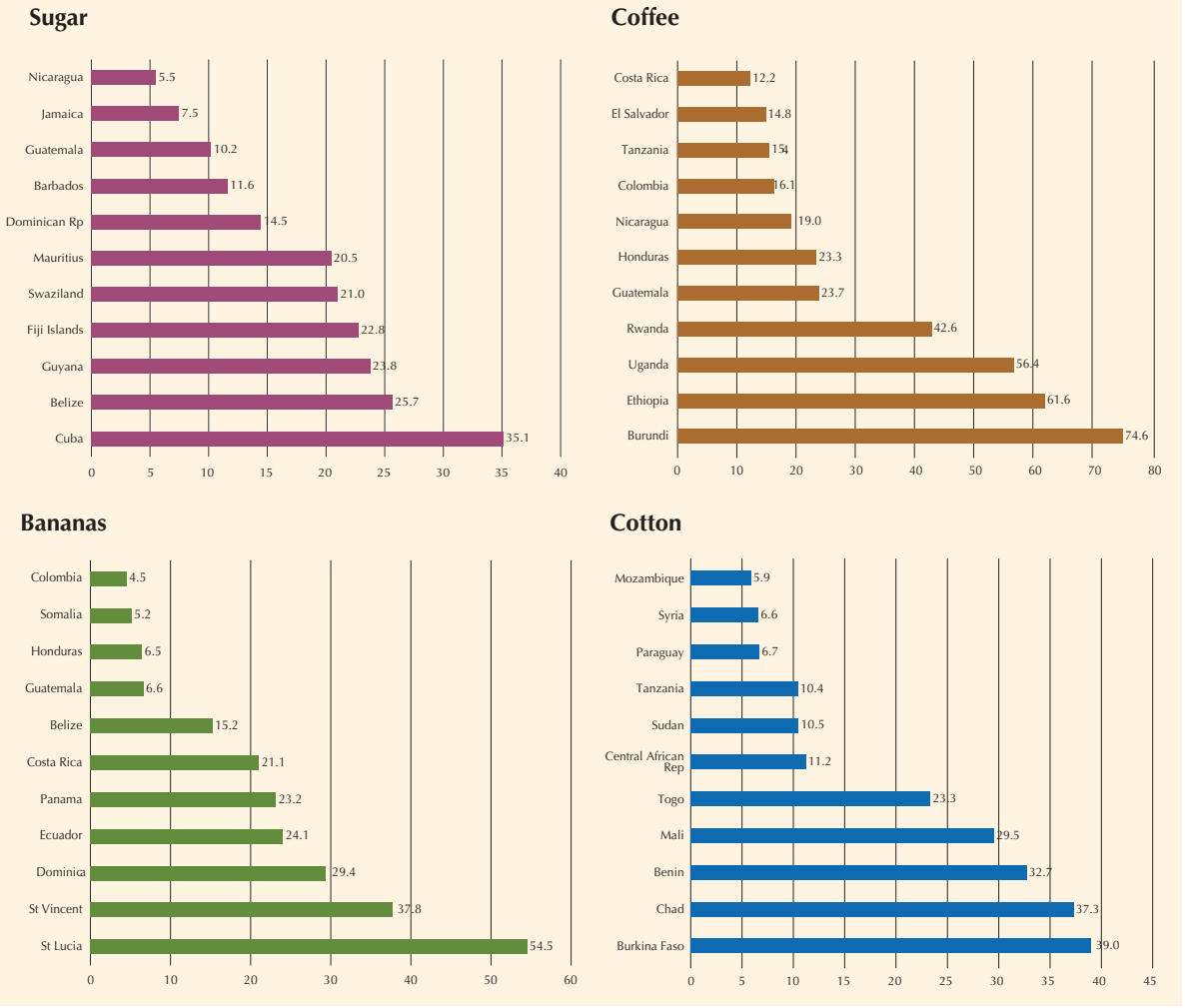
The first category includes temperate-zone commodities (wheat, coarse grains and livestock products) of which the developed countries produce the bulk of world-exportable surpluses. These commodities are also highly protected in many countries and the world market price is often influenced by heavily subsidized export surpluses. Developing countries are already significant importers of these commodities and the projections suggest that by 2030 their net imports will have increased further, e.g. more than 2.5-fold for wheat and coarse grains (Table 3.5) and almost fivefold for meat (Table 3.14).

One of the most important changes that affected the overall agricultural trade balance of developing countries was the rapid growth in imports of temperate-zone commodities. The net imports in this product category increased by a factor of 13 over the last 40 years, rising from a minor deficit of US$1.7 billion in 1961/63 to US$24 billion in 1997/99 (Table 9.1). These figures are in current US$.

A number of factors contributed to this shift. First, developing countries found it increasingly difficult to compete with subsidized surpluses of temperate-zone commodities disposed of by OECD countries. These subsidies hindered exports from all developing countries, although some countries such as Argentina, Brazil and Uruguay managed to remain net exporters. Subsidies and subsequent surplus disposal put downward pressure on international prices, and held back export volumes and earnings for temperate-zone commodities. Second, the developing countries themselves added to the growing trade deficit by taxing their own agricul-

[4] All projected trade balances in Table 9.1 are expressed in constant (1997/99) US$, but the historical data are in current US$. Therefore, the rates of increase of the historical period cannot be compared with those for the projections.

Figure 9.3 Dependence on agricultural export earnings by commodity, 1997/99
Share of export earnings in total mechandise exports (percentage)



ture directly through low procurement prices and quotas or indirectly through overvalued exchange rates and high protection rates for non-agricultural goods. In many cases, these policies had been in place before OECD surplus disposal policies became a significant factor in world agricultural trade. Third, overall economic development contributed to higher imports of temperate-zone commodities. With higher incomes and more people to feed, demand for temperate-zone commodities in developing countries increased fast, too fast for domestic production to keep pace. The rise in import requirements was particularly pronounced in countries where agro-ecological constraints restrained agricultural production growth and where urbanization and income growth brought about rapid increases in demand (notably in the Near East/North Africa region).[5]

Within the group of temperate-zone commodities, there is a discernible shift in trade from cereals to livestock products, notably to meats. This is the result of various mutually reinforcing developments that took place in parallel in developed and developing countries. In developed countries, technological and organizational progress in livestock production (vertical integration, etc.)

5 The rapid overall increase in temperate-zone commodities over the last 40 years masks the fact that import growth varied considerably during this period. Imports rose particularly fast during the 1970s and early 1980s when the oil boom afforded many developing countries, particularly in North Africa and the Near East, with the foreign exchange earnings needed to increase imports of products such as cereals, meats and dairy products, for which domestic production capacity was limited. Together with the decline in oil prices, however, growth in food imports slowed down to considerably lower rates in the late 1980s and 1990s.

Table 9.1 Trade flows between developing and developed countries

Commodity category	Net trade of developing countries (negative values denote net imports) 1961/63	1979/81	1997/99	2015[1]	2030[1]	Cumulative increase 1997/99 -2030	OECD support PSE 1998/00
	Billion US$ (current)			Billion US$ (in US$ of 1997/99)		Percentage	Billion US$
Total agriculture	6.68	3.87	-0.23	-17.6	-34.6		258.57
Total food	1.14	-11.52	-11.25	-30.7	-50.1	+345	n.a.
1. Temperate-zone	-1.72	-18.17	-24.23	-43.8	-61.5	+154	134.22
Cereals (excluding rice)	-1.57	-14.25	-17.40	-31.9	-44.6	+156	40.09
Wheat	-1.53	-10.45	-10.30	-17.3	-23.5	+128	18.13
Coarse grains	-0.04	-3.80	-7.10	-14.7	-21.1	+195	21.97
Meat	0.22	-0.56	-1.18	-3.4	-5.8	+389	49.16
Ruminant	0.27	0.14	-0.93	-2.5	-4.6	+395	32.30
Non-ruminant	-0.06	-0.71	-0.25	-0.8	-1.2	+372	16.87
Milk	-0.37	-3.36	-5.65	-8.4	-11.1	+97	44.97
2. Competing	3.13	4.29	6.20	6.3	5.9	-4	111.28
Rice	-0.07	-1.44	-0.39	-0.5	-0.7	+82	26.38
Vegetable oils and oilseeds	0.81	0.52	-0.57	-0.6	-0.6	+17	5.47
Fruit, vegetables and citrus	0.24	1.67	8.40	9.7	11.2	+33	57.44 [3]
Sugar	1.02	3.83	1.30	1.3	0.9	-30	6.73
Tobacco	0.20	0.07	1.26	0.9	0.6	-55	1.92 [3]
Cotton lint	0.91	-0.13	-3.46	-4.2	-5.0	+46	6.81 [3]
Pulses	0.02	-0.23	-0.34	-0.3	-0.4	+14	6.53 [3]
3. Tropical	3.83	17.55	19.16	22.8	26.0	+36	0.92 [3]
Bananas	0.28	1.00	2.64	3.5	4.0	+53	0.32 [3]
Coffee	1.78	9.49	9.77	11.1	12.4	+27	0.28 [3]
Cocoa	0.48	3.30	2.82	3.6	4.2	+49	0.03 [3]
Tea	0.48	0.85	1.39	1.5	1.7	+20	0.29 [3]
Rubber	0.89	2.91	2.54	3.1	3.7	+45	0.01 [3]
4. All other commodities	1.46	0.20	-1.36	-3.0 [2]	-5.0 [2]	+267	11.15 [3]
Other study commodities	0.36	0.83	0.21	0.2	0.2	+10	n.a.
Commodities not covered in this study	1.10	-0.63	-1.57	n.a.	n.a.	n.a.	n.a.

Notes:

[1] Based on projected growth in quantities (as in Chapter 3), applied to the 1997/99 trade values from FAOSTAT, rounded numbers; the projected trade balances in values are implicitly expressed in constant US$ of 1997/99, while the historical values are in current US$. It follows that the implied rates of change over time are not comparable between past and future. For such comparisons refer to Chapter 3.

[2] "Guesstimates".

[3] Pro-rated according to shares in values of production.

n. a.=not available.

outpaced productivity gains in cereal production. This made it more profitable to convert cereals into meat domestically and export meats rather than cereals (OECD, 1998). In developing countries, income growth, particularly in Asia, has contributed to a shift in consumption patterns from grain-based diets to livestock-based diets with rapidly rising per capita consumption levels (Chapter 2). Moreover, alongside overall economic development and urbanization, some developing countries that recorded higher income growth also created the infrastructure facilities (e.g. cold chains) that were needed to handle livestock product imports.

The long-term outlook presented in Chapter 3 suggests that the shift from cereals to the meat trade will continue. While cereals (excluding rice) will still account for most of the increase in absolute terms, meats are expected to exhibit the strongest relative growth. Developing countries' imports of livestock products will increase very rapidly, although starting from relatively low trade levels in the base year 1997/99. Also developing countries' overall imports of temperate-zone products will continue to rise, albeit at a lower pace. By the year 2030, developing countries are expected to increase their net imports of temperate-zone commodities to about US$61 billion (in 1997/99 US$, Table 9.1; for changes in quantities see Chapter 3, Tables 3.5, 3.14).

One of the crucial issues in this context is whether and to what extent developing countries would be able to expand their production and exports if policy distortions, particularly those imposed by OECD countries, were to be removed. Would the removal of distortions change developing countries' net trade position? Numerous studies suggest that this is unlikely to be the case. Instead, there is wide agreement that the limiting effect of agro-ecological constraints often outweighs the effects of policy distortions. In fact, a removal of OECD subsidies would largely result in a shift in market shares from subsidized to unsubsidized producers within the group of OECD countries. Only a few developing countries with additional production capacity for temperate-zone commodities, such as Argentina, Brazil, Uruguay or Thailand would expand their net export positions (see, for instance, FAO, 2000e, p. 27-28). The majority of developing countries, however, would not shift from net importers to net exporters. Where the responsiveness of agricultural supply is particularly low (as in many LDCs) and where non-agricultural protection remains high, countries will experience higher food import bills and a deterioration of their terms of trade.

The second category includes primarily *competing commodities*, i.e. those commodities that are produced in both north and south, even though they may originate from different primary products (sugar from beets or cane, oil from several oilcrops), or commodities for which competition is limited to certain parts of the year (fruit and vegetables). Overall, there is considerable competition for export shares in these markets. Subsidies in OECD countries often offset the comparative advantage of producers in developing countries.

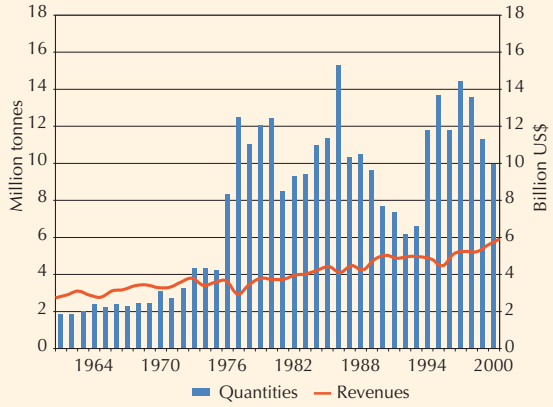
Developing countries' export interests are adversely affected by OECD policy distortions affecting competing products. Many developing countries have a comparative advantage in producing these commodities, either because their production is labour intensive (fruit and vegetables) and/or because they are strongly favoured by the agro-ecological conditions of tropical or subtropical regions (tropical fruit, sugar and rice). Developing countries' net exports in this product category amounted to about US$6 billion in 1997/99, about twice as much as in the early 1960s (in current US$, Table 9.1). At a net export level of US$8.4 billion, fruit, vegetables and citrus accounted for the largest portion under this heading, and exhibited the highest growth over the past 40 years.

Yet export growth might have been even more rapid had it not been for policy distortions, particularly OECD subsidies that totalled about US$111 billion in 1998/2000 (Table 9.1). Fruit and vegetables, together with rice, accounted for nearly three-quarters of this OECD subsidy. Developing countries, at least in aggregate, are likely to benefit from a cut in OECD subsidies and an increase in access to developed countries' markets.

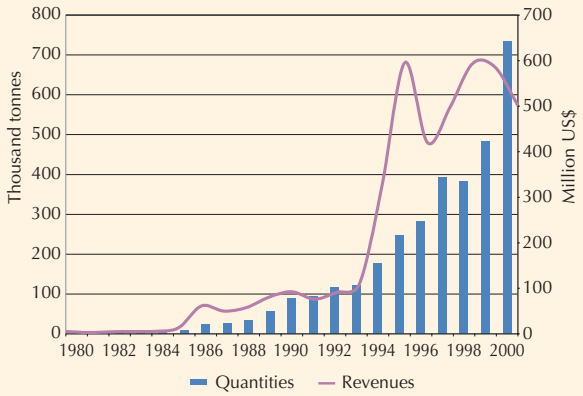
The third category encompasses *tropical commodities* that are mainly produced in developing countries, but primarily consumed in OECD countries. These are mostly tropical products such as coffee, cocoa or rubber for which developing countries have been increasing output substantially over the past decades. Developed countries' import markets for these commodities have become increasingly saturated. Demand has become

Figure 9.4 Coffee exports, world and Viet Nam

Coffee exports: Revenues grow slower than volumes for the world as a whole...



but also for new, dynamic exporters like Viet Nam



inelastic, and prices are subject to a secular decline. Since developed countries do not produce these commodities in significant quantities, they do not support or protect these markets.

Developing countries have been rather successful in expanding production and exports of tropical products. Overall, net exports of tropical products have increased by a factor of five, from about US$3.8 billion in 1961/63 to about US$19.2 billion by the late 1990s at current prices (Table 9.1). Export growth will continue over the next 30 years, and in 2030 could be higher by some 36 percent (in volume terms).

The single most important commodity in this group is coffee. Net exports of coffee account for about half of total net exports of tropical products. They increased by a factor of 5.5 since the early 1960s (in current prices), largely matching the growth of overall net exports of tropical products. Production of coffee (green beans) increased by 60 percent from 1961/63 to 1997/99 and, as domestic consumption in developing countries remained low, much of the additional produce went into export markets. Coffee exports rose rapidly over much of the 1960s and 1970s. But as developed countries' markets for coffee became increasingly saturated, growth in export volumes was no longer matched by a similar growth in export revenues. From 1974/76 to 1998/2000, volumes of coffee exports doubled while export revenues increased by merely 15 percent (Figure 9.4).

In addition to these demand-related reasons for a slowdown in export growth, growth in production and trade was also affected by policies. In developing countries, the export taxes of large exporting countries resulted in periods of attractive prices and lured more competitive countries into these markets. In developed countries, tariff escalation on more processed products kept a lid on exports of processed coffee and thus contributed to the slow growth in export earnings. Over and above tariff escalation, OECD trade and support policies play no significant role in these markets. Overall OECD countries spent less than US$1 billion, i.e. less than 0.5 percent of total producer support to subsidize the production of these commodities in 1998/2000 (Table 9.1).

The country that made the most substantive inroads into the international coffee market was Viet Nam. Over the 1990s, the country's coffee exports rose by a factor of ten in terms of quantities and a factor of five in terms of revenues (Figure 9.4). Together with rapidly rising rice production and exports, Viet Nam's coffee boom provided a boost to the country's overall rural economy. Fertilizer use increased by about 50 percent and agricultural GDP grew by about 4.5 percent p.a. The coffee boom also boosted food production and thus contributed to a reduction in hunger and poverty. Rural poverty fell from 66 percent in 1993 to 45 percent in 1998 (World Bank, 2001c) and from 1990/92 to 1997/99, the share of undernour-

ished persons declined by 8 percentage points or 4 million people (FAO, 2001a).

The coffee production and export boom in Viet Nam, however, also augmented the downward pressure on international prices. By the end of 2001, international prices for green coffee had declined to a 30-year low. Low coffee prices had serious impacts for many rural poor in those areas where production was growing less rapidly. Wages for pickers, for instance, fell along with prices for coffee and reached levels below US$1-2 per day in many African and Latin American countries. Oxfam has documented such impacts on wages and rural poverty in a number of case studies for the United Republic of Tanzania and Mexico (Oxfam, 2001). Moreover, the low international prices also affected average coffee qualities. It rendered some of the previous efforts to create high-quality coffee segments unprofitable (for instance in Colombia) and, as much of the production in the newly emerging coffee producers such as Viet Nam was of inferior quality, it lowered both average prices and average qualities.

The effects of the coffee boom confirm a number of general problems that plague producers and markets for tropical products. First, where rapidly rising supply is primarily exported to largely saturated markets, prices tend to decline rapidly and sharply without necessarily resulting in the expected contraction in production. The asymmetry in the supply response is because many of these crops are perennials, grown on a multiyear basis with a relatively large share of total investment requirements locked in at the beginning of the investment periods. To increase the returns on the fixed investment, investors have to reduce the variable costs of production. In plantation production systems, this means lower wages for rural workers (pickers); in smallholder systems, it means a considerable decline in family incomes. Second, while the promotion of production in new low-cost environments (Asia) can be an interesting agricultural development strategy in a given country, the same policy pursued simultaneously in many countries can nullify or reverse the advantage for the original beneficiary. Markets for tropical agricultural products are particularly prone to this *fallacy of composition* problem (see also Section 3.6 in Chapter 3 for a discussion of problems with tropical commodities).

9.3 The trade policy environment for agriculture

The environment in which agricultural trade policy is formed includes both the domestic political balance between competing ideas and interests and the international climate for trade rules and negotiations. This section examines current issues in the trade policy environment for agriculture and the extent to which a continuation of present trends is likely.

9.3.1 Global trends in trade policy reform

At the completion of the Uruguay Round of multilateral trade negotiations, the Agreement on Agriculture was hailed as an important first step towards the fundamental reform of the international trading system for agriculture. Since then, however, many countries have been disappointed by the modest benefits deriving from it. Indeed, some observers argue that the Agreement on Agriculture may have "institutionalized" the production- and trade-distorting policies of the OECD countries without addressing the fundamental concerns of developing countries (Green and Priyadarshi, 2002). Negotiations on the continuation of the reform process began in March 2000, as mandated under Article 20 of the Agreement on Agriculture, but the progress that can be achieved will depend, in part, on the experience of World Trade Organization (WTO) Members with the reform process thus far.

The Doha Round of multilateral trade negotiations. Article 20 of the Agreement on Agriculture declares Members' "long-term objective of substantial progressive reductions in support and protection resulting in fundamental reform" and pledges to continue the reform process, "taking into account:

- the experience ... from implementing the reduction commitments;
- the effects of the reduction commitments on world trade in agriculture;
- non-trade concerns, Special and Differential Treatment (SDT) to developing country Members, the objective to establish a fair and market-oriented agricultural trading system; and other objectives and concerns mentioned in the Agreement; and

- what further commitments are necessary to achieve the above-mentioned long-term objectives."

The negotiations on agriculture were subsumed in a broader round of multilateral trade negotiations launched by WTO at its Fourth Ministerial Conference held in Doha, Qatar in November 2001 (WTO, 2001e).[6] The round will consider agriculture as part of a "single undertaking", and the negotiations are scheduled to conclude not later than 1 January 2005. Modalities for further commitments on agriculture are to be established no later than 31 March 2003 and comprehensive draft schedules based on these modalities should be submitted no later than the date of the Fifth Session of the WTO Ministerial Conference to be held in September 2003 in Cancún, Mexico.

During the first phase of the negotiations on agriculture, which ended in March 2001, WTO Members submitted their proposals and other papers reflecting their positions and concerns. A total of 44 negotiating proposals were submitted, sponsored by 125 countries either individually or in groups. The proposals address the range of issues mandated for the negotiations, including the three pillars of the Agreement on Agriculture (market access, domestic support and export competition), as well as the cross-cutting issues of SDT for various groups of countries and non-trade concerns ranging from food security to animal welfare. They span a broad range of possible outcomes, from the rapid elimination of all trade-distorting barriers and subsidies to a slowing or even reversal of the reforms undertaken in the Uruguay Round.

The Ministers made a commitment to undertake negotiations on agriculture that, without prejudging the outcome, would aim at substantial improvements in market access, the reduction of all forms of export subsidies with a view to phasing them out, and substantial reductions in trade-distorting domestic support. It was agreed that SDT should be applied to developing countries to reflect their development needs, including food security and rural development. Non-trade concerns will also be taken into account in the negotiations. Given the wide divergence of the initial positions, radical reform seems unlikely in the near term. Nevertheless, successive rounds of gradual liberalization implemented over the next 30 years could result in "fundamental reform of the sector" within the timespan of this study.

Market access. Bound tariffs remain high in the OECD countries, especially for temperate-zone basic food commodities and products that compete with them. Developing countries typically also have high bound tariffs on agricultural goods, at 68 percent on average, but their applied tariffs are often much lower. Some countries bound tariffs for certain sensitive staple products at very low levels, often because they had previously relied on other means to control imports, such as quota exemptions under GATT Article XII for balance of payments purposes (Green and Priyadarshi, 2002). Many agricultural goods do, however, enter industrial countries duty free or at low tariffs. OECD tariffs on unprocessed tropical products are typically quite low, but tariff escalation is a problem in some of these commodities. In the EU and Japan, for example, bound tariffs on coffee escalate from zero percent on green beans to 7.5 and 12 percent, respectively, on roasted beans; while in India, this escalation goes from 100 to 150 percent (WTO, 1994).

Tariff schedules also reflect the prevalence of tariff rate quotas (TRQs),[7] with both in-quota and over-quota tariffs listed, and the proliferation of complex duties that combine elements of specific and ad valorem duties (UNCTAD, 1999b). Thirty-eight WTO Members have tariff quota commitments in their schedules, for a total of 1 379 individual quotas. But TRQs have done little to improve market access. Many countries allocated the quotas to traditional suppliers and counted pre-existing preferential access quotas as part of their minimum access commitments.[8] New access

6 The subject areas for negotiations will include the following: agriculture, services, market access for non-agricultural products, aspects of TRIPS, antidumping, subsidies and countervailing measures, dispute settlement, trade and environment, trade and investment, trade and competition policy, government procurement and trade facilitation.

7 A TRQ is a specified quantity that can be imported at tariff rates (in-quota rates) well below the "normal" (over-quota) ones. The TRQ quantities and in-quota rates should be set at levels allowing for imports no smaller than the market access opportunities that existed in the Agreement on Agriculture base year 1986-88 or in any case to allow for a "minimum access", whichever is higher.

8 Examples are sugar imports in the EU and sugar and beef imports in the United States.

volumes created by TRQs were typically less than 2 percent of world trade, and TRQ utilization rates or fill rates – the amount of trade that actually takes place relative to the TRQ level – have averaged about 60-65 percent (see OECD, 2001g). Unlike simple tariffs, TRQs generate market rents that may be captured by various groups (producer, exporting government, importing government, trader) depending on the administrative mechanism and the degree of market competition (ABARE, 1999). Thus, even if new market access is created, the producer may not capture the benefits, and there may be vested interests arguing against further expansion of these quotas.

Thirty-eight Members have the right to invoke special agricultural safeguards (SSGs) on a total of 6 072 individual tariff items. During the implementation of the Agreement on Agriculture, a total of 649 tariff items have been subject to special safeguard notification, with more than half of the price-based actions being taken by the United States, and more than half of the volume-based actions taken by the EU (WTO, 2000a).[9] Most developing countries do not have access to SSGs because they did not use the tariffication procedure. Their only practical means of stabilizing domestic markets in the face of import surges or fluctuating world prices is by varying their applied tariffs (within their bound rates), although such "price bands" could yet be challenged under the rules of WTO.

Domestic support. The Agreement on Agriculture included rules and disciplines on domestic support in recognition of the potential these policies have to distort trade. The specific provisions aim to ease trade conflicts between developed countries, to reform policies that resulted in overproduction in the past, and to ensure that commitments on market access and export competition are not undermined through domestic support measures.

Although the Agreement on Agriculture began the process of disciplining domestic support measures, the rules thus far have done little to restrain the subsidies provided by OECD countries. Furthermore, the types of policies available to developing countries under the Agreement may not be appropriate to the conditions of their agricultural sectors or sufficient to enable them to overcome the handicaps they face in international markets (Green and Priyadarshi, 2002).

The major portion of domestic support expenditures is provided by three WTO Members: the EU, Japan and the United States (Table 9.2). Although several OECD countries have reformulated their agricultural policies towards less distorting instruments, the overall level of support to OECD agriculture has not declined since the Agreement on Agriculture came into force. Support to agricultural producers in OECD countries, as measured by the producer support estimate (PSE)[10] increased relative to the Uruguay Round base period to US$258 billion in 1998-2000 (OECD, 2001e). The aggregate measurement of support (AMS) limits have not been constraining thus far: few developed countries used more than 80 percent of their commitment level in 1996. Only four WTO Members have reported that they are using or have used blue box[11] policies (the EU, Japan, Norway and the Slovak Republic).

The maximum permitted domestic support in most developing countries[12] is set by the de minimis level and the Agreement on Agriculture provisions for product-specific support. This is because only a few developing countries reported AMS figures and only 12 set them at levels above the de minimis. In theory, domestic support could total 20 percent of the total value of agricultural production (10 percent product-specific plus 10 percent non-product-specific support). In fact, very few developing countries have provided support to agriculture (exempt and non-exempt) in excess of 2-3 percent of the value of production, and many have reduced support since the Agreement on Agriculture base period because of budgetary and administrative constraints. Indeed some countries still tax the agricultural sector or specific commodities, although they are not

9 Two product categories were responsible for more than half of all SSG actions: dairy and sugar and sugar confectionery.

10 Defined by the OECD as the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farmgate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income. The PSE includes the effects of border measures and thus captures both support and protection.

11 Direct payments under production-limiting programmes. They belong to the "blue box", i.e. they are not subject to reduction commitments if they meet certain criteria.

12 For support measures included in the AMS and subject to reduction commitments.

Table 9.2 Domestic support expenditures 1996, US$ million

Member	AMS	% of AMS commitment used	Measures exempt from reduction commitments				Total expenditures
			De minimis	Blue box	Green box	SDT	
Australia	113	26	2	0	740	-	855
Brazil	0	0	363	0	2 600	269	3 232
EU	61 264	67	915	25 848	26 598	-	114 625
India (1995)	-23 847	-31	5 956	0	2 196	254	8 406
Japan	29 562	72	331	0	25 020	-	54 913
Kenya							0
Korea, Rep.	2 446	93	427	0	6 443	38	9 354
Morocco							0
New Zealand	0	0	0	0	151	-	151
Norway	1 633	79	0	638	520	-	2 791
Pakistan	-193	-	-	-	440	-	247
South Africa	451	82	203	0	544	-	1 198
Switzerland	2 962	74	0	0	2 128	-	5 090
United States	5 898	26	1 153	0	51 246	-	58 297

Source: WTO (2001a) and FAO (2000e).

allowed to offset such negative product-specific supports with positive non-product-specific support.[13]

Export competition. The third main pillar of the Agreement on Agriculture dealt with export competition. Although the original GATT 1947 prohibited export subsidies in most sectors, an exception had been made for primary products, including agriculture. The Agreement on Agriculture sought to redress this omission by establishing disciplines on the use of export subsidies.

Only eight of the 25 WTO Members that have export subsidy commitments are developing countries, as defined by WTO (Brazil, Colombia, Cyprus, Indonesia, Mexico, South Africa, Turkey and Uruguay), and only one (Colombia) reported using export subsidies in 1998. The majority of direct export subsidies are used by the EU, which in 1998 accounted for more than 90 percent of all direct export subsidies under the Agreement on Agriculture (Table 9.3).

The terms of the Agreement on Agriculture also commit Members to negotiate disciplines on the use of export credit guarantees or food aid shipments, which might be used to circumvent the disciplines on direct subsidies. The United States is by far the biggest user of officially supported export credit guarantees, having provided 46 percent of all export credits used from 1995 to 1998. Three other exporters (Australia, the EU and Canada) were responsible for almost all the remainder. The subsidy element in export credits is fairly small compared with direct export subsidies (OECD, 2000b).

Food aid has also received attention as a possible means of circumventing disciplines on export subsidies. The Agreement on Agriculture stipulates only that food aid should be provided in accordance with FAO Principles on Surplus Disposal and, to the extent possible, fully in grant form. While most food aid is made in grant form, some donors provide food aid in kind, and there has been an apparent countercyclical relationship

[13] Many developing countries reported that all their support to agriculture met the green box and/or SDT criteria for exemption, without specifying the measures or providing budgetary outlays. The conformity of these policies with the Agreement on Agriculture will remain uncertain unless assessed, perhaps in the context of dispute settlement.

Table 9.3 Export subsidy use (million US$)

Member	1998	% of commitment
Australia	1	6
Brazil	0	0
Canada	0	0
Colombia	23	22
EU	5 843	69
Indonesia	0	0
New Zealand	0	0
Norway	77	65
South Africa	3	28
Switzerland	292	65

Source: WTO (2001a).

between such aid and international commodity prices, suggesting that aid is increased when prices are low and withdrawn when prices rise.

Non-trade concerns. The Agreement on Agriculture allows significant scope for governments to pursue important "non-trade" concerns – such as food security, environmental protection, rural development and poverty alleviation – through the use of domestic support measures that are exempt under the green box (Agreement on Agriculture, Annex 2), the de minimis or SDT provisions for developing countries (Agreement on Agriculture, Article 6). Furthermore, Article 20 of the Agreement requires that non-trade concerns be taken into account in the mandated negotiations on the continuation of the reform process in agriculture.

However, many countries feel that the Agreement on Agriculture does not provide sufficient policy flexibility for the pursuit of their non-trade concerns. They argue that agriculture has specific characteristics not shared by other sectors, and should not be subject to the same types of discipline on the use of subsidies and border protection.

Thirty-eight countries submitted a note in the ongoing WTO negotiations in which they address the "specific and multifunctional" characteristics of agriculture such as its contribution to rural development, food security, environment and cultural diversity (WTO, 2000b).[14] Several formal negotiating proposals have elaborated on these themes. Norway, for example, used the non-trade concerns argument to justify its proposal that certain basic food commodities be exempt from further market access commitments and that production-distorting supports for commodities destined for the domestic market be subject to less stringent AMS disciplines (WTO, 2001a). Similarly, Japan uses the multifunctionality of agriculture to justify its call for discretion in setting tariffs and providing domestic support (WTO, 2000c).

Most WTO Members have agreed that agriculture is multifunctional, although several have argued that it is not unique in this regard. The Members have also agreed that each country has the right to pursue its non-trade concerns. The question being debated in the WTO is whether "trade-distorting" subsidies, or other subsidies not currently exempt from disciplines, are needed in order to help agriculture perform its many roles.

Where Members differ sharply is in their views regarding the appropriate policy response to non-trade concerns. Many countries, particularly the members of the Cairns Group, have argued that non-trade concerns do not justify the use of production- or trade-distorting support and protection. South Africa, for example, insists that the non-trade concerns of some countries should not become trade concerns for others (WTO, 2000d). Furthermore, many developing countries have sought to distinguish their concerns regarding food security and sustainable development from the non-trade concerns of developed countries. India in particular has argued that the food security and livelihood concerns of low-income countries with large agrarian populations "should not be confused or equated with the non-trade concerns advocated under 'Multifunctionality of Agriculture' by a few developed countries" (WTO, 2001b).

[14] The economic debate surrounding the multifunctionality of agriculture is generally framed in terms of public goods and externalities. Economists generally agree that agriculture can be a source of public goods. These are goods that are non-rival (one individual's consumption of the good does not reduce the quantity available to others) and non-exclusive (once the good becomes available it is not possible to prevent someone from consuming it). The non-rival and non-exclusive nature of public goods means that they are not properly priced in a market system. Agriculture may also be a source of positive externalities. Externalities impose social costs or generate social benefits jointly with the production of a good, beyond the private costs or benefits deriving from the good. Positive externalities are consumable but are not priced in the market. For public goods and positive externalities associated with agriculture, it can be argued that producers should be rewarded in order to ensure a sufficient supply of the desired goods (Blandford, 2001).

Developing countries and the Agreement on Agriculture. Clearly, the Agreement on Agriculture does not in itself help developing countries to strengthen their agriculture. It expects essentially the same type of commitments by developing countries, including the least developed, as by developed countries. Measures for SDT for developing countries were generally in the form of lower reduction commitments or longer implementation periods that did not recognize the fundamental differences between the agricultural sectors of developed and developing countries. Many SDT provisions were of little use to developing countries. A longer time period to reduce subsidies on domestic support or exports is meaningless for a country that does not provide such subsidies. But, by binding subsidies at their de minimis or base levels, the future ability of developing countries to invest in the agricultural sector may have been constrained.

Another issue of interest to many developing countries is the full implementation of the Marrakesh Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least Developed and Net Food-Importing Developing Countries. This issue will be addressed in the current negotiations on agriculture. Trade Ministers have approved the recommendations of the Committee on Agriculture that the delivery of food aid to Least Developed Countries (LDCs) be fully in grant form and, to the extent possible, that levels of food aid be maintained during periods of rising world prices. The Ministers have also endorsed the recommendation that a multilateral facility be explored to assist LDCs and Net Food-Importing Developing Countries (NFIDCs) with short-term difficulties in financing normal levels of commercial imports, including the feasibility of creating a revolving fund (FAO, 2001j).

9.3.2 Regional and preferential agreements

Although the WTO rules apply generally to international trade, almost all WTO Members also participate in regional trade agreements. Moreover, many developing countries are granted preferential access into industrial markets for tropical products. The terms under which trade takes place within these agreements is important to the development of agriculture and the future of the food system. Thus a discussion of the long-term outlook for agriculture must include the role of regional trade agreements (RTAs) and the future of non-reciprocal preferential trade agreements (PTAs).

Regional trade agreements. The past decade has seen a proliferation of regional agreements involving agriculture, and this trend is likely to continue and intensify, particularly if the WTO multilateral negotiations stall. At the same time, PTAs that have so far characterized much of the trade between developing and developed countries are set to change significantly.

Nearly all WTO Members are parties to at least one RTA, some belonging to ten or more. Since 1948, more than 225 RTAs have been notified to GATT/WTO, of which about 150 are considered active, and more than two-thirds of these have been formed since the WTO entered into force in 1995 (WTO, 2001d). About 60 percent of these new agreements were formed by countries in Europe: among countries of Central and Eastern Europe, between those countries and the EU or between the EU and countries in other regions such as North Africa. In addition, many others, particularly in Africa, have been declared but not yet notified to WTO.

Countries have many reasons for joining RTAs. The economic benefits can be significant if lower-cost imports from the partner country displace higher-cost domestic goods (trade creation) or if access to a larger market allows producers to achieve greater economies of scale. Regional agreements may also stimulate foreign investment and technology transfer among members. RTAs may provide a forum in which trade liberalization can be pursued at a different pace, faster or slower, than in the multilateral system. But the benefits may extend beyond pure economics. For example, regional integration may be a useful strategy for improving regional security, managing immigration flows or locking in domestic reforms.

Against these potential gains, regionalism is not without costs. The classic trade diversion effect occurs when lower-cost imports from non-members are displaced by higher-cost products from a member, raising consumer costs and exacerbating inefficient production patterns. In addition to diverting trade away from efficient suppliers, complicated rules of origin and sourcing requirements may create difficulties for members themselves. Other costs are

largely related to the administrative burdens associated with negotiating and operating RTAs. These can be particularly severe for small countries with scarce negotiating capacity and for countries involved in numerous agreements.

Is regionalism a threat to the multilateral system or a response to its failure? As noted above, about two-thirds of the RTAs that are currently in force have been notified since the creation of WTO, and a large share of them are association agreements with the EU. Since agriculture is typically given special treatment in these agreements (i.e. less integration and longer transition times than other sectors), it is difficult to argue that they are responding to a failure of the Agreement on Agriculture to liberalize fast enough. For many of these RTAs, it is likely that the agricultural sector was less important than other sectors and that non-economic considerations have greater importance than the potential economic benefits.

Other RTAs, such as the North American Free Trade Agreement (NAFTA) among Canada, Mexico and the United States, and the Mercado Común del Sur (Mercosur) among Argentina, Brazil, Paraguay and Uruguay, have liberalized agriculture at a considerably faster pace than in the Agreement on Agriculture, albeit more slowly than other sectors. Some of the agreements that are currently being negotiated, such as the Free Trade Area of the Americas and the Caribbean, and the African Union, envision a more aggressive pace of agricultural liberalization and integration than the multilateral system seems capable of delivering. If the WTO negotiations stall, it seems likely that these countries would put greater efforts into their regional integration plans.

Bilateral, regional and plurilateral institutions also play a role in global food regulation (Josling, Roberts and Orden, 2002). There is the potential for bilateral or regional standards to become *de facto* international norms without the full participation of all trading countries. When nations try to harmonize their respective technical regulations to permit the free movement of goods within a region, their external trading partners may face new technical requirements for gaining entry to the unified market. These external regulatory changes, or even proposed regulatory changes, can lead to market disruptions for the private sector, which in turn can produce trade conflicts for the public sector to resolve. New regional trade alliances, as well as the enlargement and deeper integration of older alliances, have been factors in the increase in technical barriers brought to the attention of policy-makers by exporters.

Regional agreements can, however, also point the way towards global standards. An early example of the regional "test bed" function was the provision in the United States-Canada Free Trade Agreement for the mutual recognition of testing and inspection facilities for livestock destined for sales across the mutual border. An early version of what eventually became the Sanitary and Phytosanitary (SPS) Agreement was inserted into NAFTA.[15] The three partners agreed to incorporate the use of scientific evidence in domestic regulations and to set up a mechanism for examining cases where one country (typically the exporter of a particular product) considered that the importer was using sanitary and phytosanitary regulations to protect domestic production. The main impetus for such a provision was the view that market access negotiated under NAFTA could be severely jeopardized if arbitrary health and safety rules were to be allowed to go unchallenged.

A more recent example of a bilateral agreement to handle food regulatory issues is that between Australia and New Zealand. These two countries regulate food safety jointly through the Australia New Zealand Food Authority (ANZFA) and administer standards through the Australia New Zealand Food Standards Council (ANZFSC). Such a close working agreement is made easier, and more necessary, by the existence of a fairly complete free trade area between the two countries, the Australia-New Zealand Closer Economic Relations Agreement (CER). As two exporters of food products, relatively remote from other landmasses, both countries are anxious to keep out plant pests and animal diseases where possible and to maintain their reputation as suppliers of disease-free, quality foods (Josling, Roberts and Orden, 2002).

[15] The negotiations were progressing in parallel in the period 1991-93, with the NAFTA negotiations a little ahead. However, much of the work in the GATT negotiations on the SPS Agreement had been conducted in a subcommittee of the agriculture negotiating group and had made progress before the NAFTA process was initiated.

At the other end of the spectrum of bilateral approaches to food regulations is the attempt to use the transatlantic partnership between the United States and the EU. Several agreements of potential significance have been negotiated, although not without considerable time and effort. These tend to be agreements for the mutual recognition of testing and certification, rather than the recognition of the standards of the transatlantic partner. On the most contentious issue, however, that of the introduction of genetically modified (GM) foods, fundamental differences in approach still remain unsolved (Patterson and Josling, 2001).

Among the more ambitious regional initiatives in the area of plurilateral coordination of food regulations is the one discussed in the Asia-Pacific Economic Cooperation Council (APEC) process. APEC debated establishing an APEC Food System, which would have included both food safety and trade liberalization instruments. The food safety part of the programme has yielded a framework for mutual recognition agreements (MRAs) in the area of conformity assessments. Building on the SPS Agreement and the CODEX guidelines for such MRAs, the APEC Food MRA system allows countries to negotiate agreements that will facilitate trade in foodstuffs in the Asia-Pacific region. Whether this is the start of a more substantial cooperation in the food regulations area will in part determine the attraction of such plurilateral schemes.

Preferential agreements. Developing countries often depend on PTAs for access to the protected developed country markets in Europe, North America and Japan, particularly so for agricultural exports. But some of the existing and proposed preferential schemes may be incompatible with the terms of WTO or with regional integration agreements. Even when compatibility is not a concern, the value of these preferences is likely to shrink as general tariffs decline. Thus, many of the developing countries that currently depend on trade preferences may face difficult adjustments in the coming decades (Tangermann, 2001). Four non-reciprocal preferential arrangements are of particular relevance: the Generalized System of Preferences (GSP) under WTO, the ACP-EU Cotonou Agreement, the United States Trade and Development Act of 2000, and the Everything But Arms Initiative to provide duty-free and quota-free market access to the EU for the products of LDCs.

Generalized System of Preferences. The broadest of the existing non-reciprocal preferential arrangements is the GSP. Within the GSP, the preference-granting country has unilateral discretion over product coverage, preference margins and beneficiary countries. Many developing countries have complained that the product coverage of GSP schemes is not consistent from year to year, making it difficult for them to attract the necessary investment to develop the supply-side capacity to take advantage of the preferences. Others have noted that the GSP schemes granted by different countries vary considerably, making it difficult for exporters to know what tariffs their products will face in various markets.

Several proposals in the WTO negotiations on agriculture address these problems, calling for preferences to be made more transparent, stable and reliable. Some countries have argued that, in addition to the two main categories of countries that currently receive preferences under GSP (developing and least developed countries), other subgroups of countries should be eligible for non-reciprocal preferences. These subgroups comprise countries that are particularly disadvantaged in global markets by factors such as their size or geographical remoteness.

ACP-EU Cotonou Agreement. The EU historically granted trade preferences to the ACP countries under the Lomé Conventions that, in their later years, operated under a waiver from the GATT/WTO principle of non-discrimination that expired in 2000. The Lomé preferences have been extended for seven years under the ACP-EU Cotonou Agreement (which has also been given a WTO waiver), during which time the parties will negotiate new WTO-compatible trade arrangements, to come into force on 1 January 2008. These negotiations are envisaged to result in regional economic partnership agreements (REPAs), in effect, fully reciprocal free-trade areas with the EU. Agriculture will play a major role in these new agreements.

As the REPAs will have to be fully consistent with GATT Article XXIV and include "substantially all trade", it will be more difficult for the EU to restrict access for agricultural products from REPA partners, although some quantitative

constraints can presumably continue in cases where domestic production is also curtailed. One would expect pressure from developing countries that are not signatories to the Cotonou Agreement to make sure that those countries negotiating REPAs do not perpetuate preferential access for particular commodities that would be inconsistent with WTO rules. But, on the other hand, within the REPAs there may well be scope for agricultural policies that benefit ACP countries as they continue to supply the EU market.

United States Trade and Development Act of 2000. The US Trade and Development Act of 2000 extends certain trade benefits to selected groups of developing countries, including those covered by the Caribbean Basin Initiative and the Africa Growth and Opportunity Act. The US Trade and Development Act of 2000 is somewhat less comprehensive than the Cotonou Agreement, and some of its provisions could prove problematic in the context of regional economic agreements among developing countries. The main difficulty will likely relate to eligibility requirements and rules of origin.

For the African initiative, eligibility for the programme is to be determined annually by the United States Government on the basis of numerous criteria spelled out in the legislation. Rules of origin are quite detailed and strict, and penalties for transshipment are severe. Generally speaking, eligible products may receive preferential treatment only if they are produced almost entirely in one or more beneficiary countries or the United States. Origin rules for certain textile products, for example, allow no more than 7 percent of the fibre content by weight to originate outside the United States or one of the beneficiary countries, while for other products, no more than 25 percent of the final value may originate from outside. No provision is made for the regional agreements that may exist between eligible and non-eligible countries (OAU/AEC, 2000).

Everything But Arms Initiative (EBA) and LDCs. The conditions of access for LDCs appear to be one area where trade liberalization is making some headway. Agricultural products are included in the schemes that have been discussed in this regard. In 2001 the EU granted duty-free and quota-free market access, under the EBA, to all products originating from the 49 LDCs except armaments and, after 2006-2009, bananas, rice and sugar. Since the EU announcement, some other countries have declared their intention to extend similar preferential access for LDCs. Several proposals have been tabled in the WTO agriculture negotiations that would make this a permanent obligation of developed country members, a commitment that was taken up by all WTO Members in the Doha Ministerial Statement. These preferences could mark a significant improvement in the market access enjoyed by LDCs, although some have questioned the degree to which developing countries as a group would benefit, since the economic gains for LDCs under this initiative would come largely at the expense of other developing countries, some of them only slightly better off than the beneficiaries. Of course, this holds for all preferential schemes that cover some, but not all, developing countries (including those mentioned above).

9.4 Towards freer trade in agriculture: what is important from a 30-year perspective?

As discussed earlier, both market and policy factors have affected the evolution of volumes and patterns of trade. While some indications of the relative importance of the two factors have been given, no quantitative assessment has been provided. This section will attempt to distinguish policy factors from non-policy factors and give some guidance as to what would happen if trade policy distortion were to be removed. The removal of these policy distortions will again affect trade patterns and bring about benefits and costs for all countries, particularly those that are participating in the reform process. This gives rise to questions such as: How important are policy and non-policy factors in developing and developed countries? What will happen if some, or all, distortions are removed? What differential impacts can be expected from specific reform packages? What would help or harm developing countries and what should be the priority areas for developing countries in the trade liberalization process?

9.4.1 How significant are the expected overall benefits from freer trade?

The basic case for multilateral trade liberalization rests on the potential for large global welfare gains.

Estimates for the magnitude of these welfare gains vary considerably depending on the base year for the model simulations and the comprehensiveness of the reforms over sectors and participating countries. A recent study (Brown, Deardorff and Stern, 2001) estimated global cumulative welfare gains from comprehensive trade liberalization (agriculture, manufactures, services) at about US$1 900 billion over a period of ten years.[16] The World Bank estimates that global gains from comprehensive trade reform could amount to about US$830 billion and that low- and middle-income countries would be able to share in benefits of about US$540 billion. All estimates include both static and various forms of dynamic gains[17] (World Bank, 2001c).

The likely impacts of further liberalization in the agricultural sector have been the subject of several detailed analyses. While such analyses differ significantly in model structure and assumptions, they agree roughly in terms of the likely magnitude of impacts on agricultural commodity prices, trade volumes and economic welfare. In general, the results suggest that the expected benefits of agricultural trade liberalization are less important for developing countries than for developed countries.

ABARE, for example, has analysed the impacts of agricultural trade liberalization using a computable general equilibrium (CGE) model (ABARE, 2001). This analysis found that a further 50 percent reduction in agricultural support levels alone would create a static US$53 billion increase in global GDP in 2010. Some US$40 billion of this would accrue to developed countries. Full liberalization of agriculture and manufacturing would boost global GDP by US$94 billion, with developing countries capturing most of the increment and about half the total (because they have relatively high levels of industrial protection). If dynamic gains are incorporated, global GDP would increase by US$123 billion relative to the base case, with more than half these gains going to developing countries (because they have greater potential for productivity improvements). In the agricultural sector, the gains for developing countries would be greatest in those that are either producing or are capable of producing the commodities that are currently most heavily supported in the developed countries such as livestock products, grains, oilseeds, sugar, fruit and vegetables.

The results of a study by Anderson (Anderson *et al.*, 2000) are summarized in Table 9.4. The study suggests that if all agricultural protection and trade barriers were removed globally, the world as a whole could expect an annual welfare gain of about US$165 billion (in constant 1995 US$). The gains could be significantly higher if reforms were extended to include freer trade in services and manufacturing as well as a liberalization of investment flows. But the results also show that the benefits of freer trade in agriculture would largely accrue to the developed countries. In fact, if reforms are limited to the developed countries, more than 90 percent of the additional welfare gains will remain within the group of high-income (OECD) countries. This reflects largely the fact that subsidies and other distortions in OECD agriculture are extraordinarily high. Their removal would create an increase in welfare for consumers in OECD countries (through lower consumption prices) and an increase in welfare for producers in non-subsidizing OECD countries (through higher farm prices).

Table 9.4 Welfare gains from agricultural trade liberalization (per year, in 1995 US$)

Liberalizing region	Benefiting region	Welfare gain (billion US$)
High income	High income	110.5
	Low income	11.6
	Total	122.1
Low income	High income	11.2
	Low income	31.4
	Total	42.6
All countries	High income	121.7
	Low income	43.0
	Total	164.7

Source: Anderson *et al.* (2000).

[16] Serious doubts have been raised about the plausibility of these estimates. For example, an analysis by Dorman suggests that the estimates only measure the benefits, without fully accounting for the costs associated with the reallocation of resources, etc. (Dorman, 2001).

[17] The dynamic gains often account for the major part of all welfare gains. Estimates for these gains are particularly high when they are based on additional productivity gains that are assumed to emerge when firms start to penetrate world markets and they are forced to adopt new technologies. In addition, firms can benefit from scale economies and a larger market. The assumed underlying relationship between openness and productivity growth applied in these models is econometrically estimated. It should be noted that even the authors of these studies underline that "much more work needs to be done in this area" (World Bank, 2001c, p. 167).

USDA has analysed the potential impacts of further liberalization of agriculture (USDA, 2001d). This report uses a combination of static and dynamic CGE models and other analytical tools to assess the economic costs of the current distortions in global agricultural markets and the potential effects of trade liberalization on global welfare and on various countries, commodities and economic agents. For a complete removal of subsidies and tariff barriers, the USDA study assesses global welfare gains at US$56 billion annually. This total entails both static (US$31 billion) and dynamic welfare gains (US$25 billion). The static benefit would accrue almost entirely to developed countries (US$28.5 billion of the total of US$31 billion) while developing countries are expected to share in a larger part of the dynamic gains (US$21 billion out of the total of US$25 billion).[18] The USDA study also finds that world commodity prices would be an estimated 12 percent higher on average, with the biggest gains for livestock and products, wheat, other grains and sugar. There are interaction effects among policy categories, but about half of the impact on prices would derive from the elimination of tariffs and other border measures, about a third from elimination of domestic supports, and the remainder from the elimination of export subsidies.

Despite the evidence of aggregate welfare gains, the USDA study found that some countries may lose from agricultural trade liberalization. Within countries, there will be both winners and losers as resources are reallocated according to their comparative advantage. Exporting countries stand to gain from improved terms of trade, relative to those they would obtain in the absence of reform. Importers may benefit from improved domestic resource allocation but losses in consumer welfare outweigh gains in producer welfare in exporting countries. Also, net exporters with preferential arrangements are likely to lose, as well as food importers where there is no potential improvement in domestic efficiency to offset the effect of higher world prices. In the case of the former, it is questionable, however, whether the dependency fostered by preferential agreements is of long-term benefit.

9.4.2 What if all OECD countries dismantle their agricultural subsidies?

The results from the various impact studies provide useful information about the general changes that are likely to emerge from trade liberalization for global agricultural markets. All of these results refer to baseline scenarios that describe a situation or an outlook without policy reforms. These baseline scenarios may differ in many important aspects from the projections presented in this study (Chapter 3). Below, the results of a policy reform scenario will be discussed, which takes the baseline scenario projections of this study as a starting-point.[19]

The current levels of farm support form the starting-point for two different policy reform scenarios. In a first step, all market price support is phased out in equal annual steps over a period of 30 years.[20] These price support measures are commonly regarded as the most distorting kinds of subsidies and form a subset of the so-called amber box measures of the Uruguay Round. They stimulate production in a direct and immediate way (Figure 9.5, 2nd diagram). In a second step, the gradual elimination of price support is accompanied by a complete phase-out of all non-price-related subsidies. This second scenario reflects a comprehensive removal of agricultural policy interventions in all OECD countries, i.e. a removal of subsidies to the tune of US$266 billion (OECD, 2001e). Both the gradual elimination of market price support and the phase-out of other subsidies are implemented at the level of individual commodity markets and countries or country groups (Figure 9.5, 3rd diagram).

For countries where producer support estimates are not available, i.e. non-OECD and non-transition economies,[21] domestic and international prices are linked via simple price transmission equations that translate, at varying degrees,

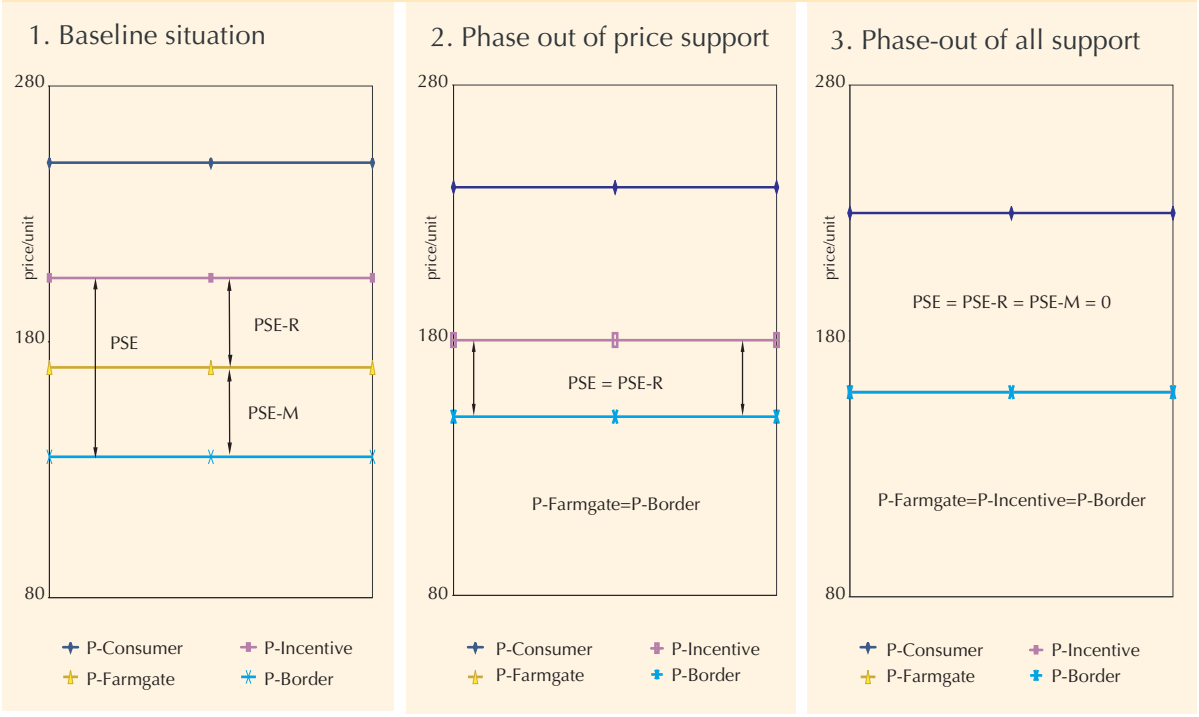
[18] These additional gains are assumed to emerge from "increased savings and investment as policy distortions are removed, and from the opportunities for increased productivity that are linked to more open economies" (USDA, 2001d, p. 6). This means that the gains would only be forthcoming if developing countries embark on domestic policy reform as well.

[19] A detailed description of the underlying model is provided in Schmidhuber and Britz (2002).

[20] No allowance is made for possible de minimis provisions that would afford individual countries a subsidy limit of up to 5 and 10 percent of the value of production for developed and developing countries, respectively.

[21] The scenario also assumes the removal of some US$2 billion of agricultural subsidies (OECD, 2001f) in economies in transition.

Figure 9.5 Policy wedges, prices and reforms



PSE: Producer support estimate
PSE-M: Market price support of the PSE
PSE-R: Non-price related support (PSE minus PSE-M)

changes in international prices into changes in domestic prices. These varying degrees of price transmission are encapsulated in a price transmission elasticity, which represents both tariff-based protection and "natural" protection. The elasticity can range from 0 to 1, where a value of 1 represents full transmission of price signals from the world market, while a value of 0 denotes complete insulation. In the scenario runs, these elasticities are increased year by year. In the first scenario, all price transmission elasticities are gradually increased to reach a value of 0.8 by 2030, wherever they are below this value in the baseline projections. In the second scenario, all price transmission elasticities are gradually increased from 0.8 to a level of 1 by 2030 which, together with a complete elimination of support policies in OECD and transition countries, represents the comprehensive policy reform scenario.

Impacts by commodity group.The most significant changes are expected to occur for temperate-zone commodities that account for the major portion of OECD policy distortions. OECD countries would also be most affected by these policy reforms. There would be a shift in market shares from currently highly protected and supported producers to countries that have relatively liberal agricultural policy regimes. In general, production in Japan, Norway, Switzerland and, to a lesser extent, the EU would decrease and production in Australia, New Zealand, the United States and Canada would increase.

Some developing countries would also gain. The main beneficiaries would be Argentina (wheat, maize and beef) and Brazil (poultry). The majority of developing countries would reduce somewhat their imports of temperate-zone commodities but the price effects that emerge from international markets are mostly too small to change the net trade picture significantly, either for the majority of individual developing countries or for developing countries as a whole. This reflects their low supply responsiveness for temperate-zone commodities, particularly compared with developed countries. It is also a reflection of low and declining demand elasticities, which are assumed to fall with rising income levels (for details, see Schmidhuber and Britz, 2002).

Developing countries are estimated to gain more from OECD policy reform for competing products. OECD producer support for competing products accounts for about 40 percent of total PSE support. Many developing countries could step up their production of these commodities and increase exports. Examples are Thailand (rice and sugar), China (fruit and vegetables), Brazil (sugar), Malaysia, Indonesia and Argentina (vegetable oils), Zimbabwe (tobacco) and Pakistan (cotton). However, the majority of developing countries would remain net importers: they would import lower volumes at higher prices.

Prices and markets for tropical products would not be affected substantially. There is no significant production in OECD countries and, hence, no producer support to be removed. Developing countries might be able to reap more significant gains if OECD policy reforms were extended to include a reduction in protection of processed products (tariff escalation) or the abolition of commodity-specific consumer taxes.

Impacts by country group. The impacts of OECD policy reform would be felt most strongly in those OECD countries where producer support has been highest. Consumers would gain significantly from lower prices while producers would reduce output and lose market share. OECD producers in countries where support is small (e.g. beef and dairy in Australia or New Zealand) would benefit and gain market share at the expense of producers in protected markets. This outcome is consistent with the results from the above-mentioned USDA and ABARE studies that suggest that the major part of all welfare gains would accrue to developed countries, more specifically to consumers in protected and producers in unprotected markets.

A number of developing countries would also stand to gain from OECD policy reform. In general they are already net exporters of temperate or competing products. However, they are very few in number and belong largely to the group of the most advanced developing countries. The group of the least developed countries would in general be worse off. Very few of them are net exporters of temperate-zone or competing products.

Impacts on prices. In general, the results suggest that even a comprehensive policy reform package would have only a moderate impact on the level of world market prices (border prices). Supply for temperate-zone commodities in OECD countries is relatively responsive to price incentives, particularly in countries with substantial production potential and where farmers have traditionally been producing at world market price levels (in Oceania and, to a lesser extent, in North America). As prices increase, farmers in these countries would swiftly expand production. A significant impact on world prices occurs only for products where distortions are particularly high and the responsiveness of producers to higher prices is generally low, notably milk, for which prices are expected to increase by about 17 percent (Table 9.5).

Table 9.5 Impacts of partial and comprehensive policy reform on world commodity prices

	Partial policy reform (phase-out of market price support)	Complete policy reform (phase-out of all support)
	Changes in real prices relative to the baseline (baseline=100)	
Cereals	103	111
Wheat	104	119
Rice	104	111
Maize	99	106
Milk and dairy products	111	117
Beef	106	108
Sheep and goat meat	104	105
Pig meat	102	103
Poultry meat	103	104

Some developing country producers would also be responsive to higher prices, notably those in Brazil, Argentina, Malaysia or Thailand. There is even an additional production potential in those developed countries in which support would decline (e.g. in Europe). Many have put in place policy programmes that offset the output-enhancing effects of support and hold production below "normal" output levels (such as production quotas, extensification programmes and set-aside schemes). Policy reforms are assumed not only to remove subsidies, but also to lift these production constraints.

A further dampening effect on prices would occur because a removal of subsidies for all commodities would be likely to result in mutually offsetting effects for interlinked markets. The expected price changes for cereals are a case in point. While a removal of subsidies for cereals would put a brake on production and underpin international prices, the removal of support for livestock production would lower demand for feed-grains. This would offset much of the potential international price boost to cereals from lower subsidies given to cereal producers.

Although *producer prices* for the world as a whole would not be affected strongly, this small average impact masks more significant, but mutually offsetting, price effects in individual countries or regions. For example, the world average producer incentive prices for rice are expected to fall by only about 10 percent, but those in Japan would be as much as 85 percent below the levels assumed in the baseline scenario. At the same time, producer price changes could be very substantial for farmers in non-protected markets, such as dairy farmers in New Zealand.

Changes in *consumer prices* are also expected to be small, especially in OECD countries. For many commodities, the price of the primary product (e.g. cereals) accounts for only a small share of the total costs for the final consumer good (e.g. bread, noodles). The effect of liberalization would be significantly diluted by substantial processing and distribution margins, which can account for up to 90 percent of the value of the final product. In developing countries, the processing and distribution margins are smaller and thus the changes in the price of the primary product translate into more pronounced increases in consumer prices.

9.4.3 What makes it difficult for farmers in developing countries to reap the benefits from lower OECD distortions?

First, a look at protection and support levels by country and commodity suggests that agricultural trade distortions are concentrated in a few developed countries and the most distorted markets are those for temperate-zone commodities. Particularly high subsidies are provided to farmers in Japan, Norway, Switzerland and the EU, while other OECD countries such as Australia and New Zealand are producing at low costs without major subsidies (OECD, 2001e). In addition, these countries have the infrastructure in place that will allow them to capture the market shares that become available when subsidies are removed in the high support countries. Only a few developing countries have a comparative advantage in producing temperate-zone commodities such as milk and meat, wheat and coarse grains. As a result, a cut in OECD subsidies may primarily result in an exchange of market shares between OECD countries.

Second, even if and when trade liberalization results in higher and more stable international prices, it is unclear whether and to what extent these signals will be transmitted to farmers in developing countries. Inadequate infrastructure and inefficient marketing systems effectively insulate many farmers from world markets. In these cases, much of the price incentive that farmers would receive from world markets can be absorbed by the inefficiencies in their marketing and transportation systems.

Third, for products where the developing countries have a comparative advantage and even LDCs could benefit, e.g. coffee, cocoa, tea, spices and tropical fruit, developed countries' import tariffs have already been reduced and the effects of further liberalization are likely to be small. Tariff escalation remains a serious problem, but it is unclear how many LDCs could develop significant export-oriented processing industries even if tariff escalation were eliminated. The biggest distortions for these products are in developing countries themselves (USDA, 2001c). Their bound import tariffs for these products are higher than those in developed countries, both for the raw commodities as well as for the processed products (USDA,

2001c). Even for these countries, applied tariffs are generally much lower than bound rates, so further reductions in bound rates will have little effect unless they constrain the applied rates.

Finally, farmers in developing countries may not gain so long as their own domestic policies offset much of the price incentives from international markets. Most developing countries heavily taxed their agriculture throughout the 1970s and 1980s (through direct and indirect measures). Many have continued to do so over the 1990s. India, for instance, has submitted an AMS notification with an overall support level of about US$-24 billion, equivalent to a tax of 31 percent of the value of production (FAO, 2000e). Also farmers in Pakistan are producing under a net tax burden, although at a lower level. For China, PSE calculations suggest that its agricultural sector faced massive taxation for much of the 1980s and 1990s, at rates of 18 to 65 percent (OECD, 2001f). Particularly high rates were reported for rice (Webb, 1989) and pork (USDA, 1998b), farm products that are typically produced by China's smallholders.[22]

Over and above these direct burdens on agriculture, farmers in almost all developing countries have been handicapped by even higher effective rates of taxation caused by considerable non-agricultural tariffs. These tariffs make their inputs more expensive and bring them into a competitive disadvantage particularly *vis-à-vis* farmers in industrial countries who benefit from very low tariffs for manufactures (on average 4 percent). The non-agricultural tariffs make the effective burden for farmers even higher than the negative AMS or PSE calculations would suggest. The high effective burden from non-agricultural protection also explains why developing countries' agriculture stands to benefit the most from comprehensive trade liberalization. Out of the US$832 million of welfare gains from comprehensive trade liberalization as estimated by the World Bank (see above), agriculture would account for US$587 billion. Of this latter amount, US$390 billion would accrue to low- and middle-income countries, where much of this would come from a liberalization of the non-agricultural sectors in developing countries (World Bank, 2001c, p. 171).

9.5 Beyond the traditional trade agenda: emerging long-term trade policy issues

9.5.1 The new trade policy environment

The main focus of international trade policy has traditionally been on the conditions of access to markets. In the recent and emerging trade policy environment, the scope of the rules governing trade continues to expand. These include the health, safety and environmental rules that ensure quality and acceptability in discriminating markets, codes for the treatment of foreign direct investment, the regulation of conditions of competition and the codification of intellectual property rights.

Agricultural trade policy used to be dominated by farm-level issues, with the active participation of farm and commodity groups and those arguing for more protection. One major shift in the 1980s was the involvement of multinational food firms in the trade negotiations. This trend is likely to continue with the structural changes apparent in the food sector. First, the processing sector has a strong incentive to look for low-cost supplies. It therefore has the incentive to lobby governments for the ability to import those supplies from world markets, so as to remain competitive with firms located in countries where prices are lower. In many cases the low-cost food suppliers are in the Americas, as are the main competitors in the global marketplace. Hence one would expect continued pressure from the food industry to allow raw material prices to fall to roughly United States levels over a period of years. Given the disinclination of governments to support these prices indefinitely, the pressures from the food industry may well come to prevail in the end.

The tendency for international food companies to search for low-cost supplies will be reinforced by

[22] Negative support is not subject to reductions in multilateral trade negotiations. In fact, there are proposals to maintain negative support and receive credit for negative support in the calculations for the total AMS. In practice this could be implemented by adding up negative non-commodity-specific support with positive commodity-specific AMS and vice versa. The easiest way to remove the bias against agriculture, however, would be to remove taxation on agriculture. It may also be the cost-effective way for many developing countries. Taxation often works through procurement price systems that are easy to administer. Keeping both taxes and subsidies would also add to the administrative burden of policy implementation, an important advantage for many developing countries that often lack the necessary administrative system for more targeted policy measures.

pressure from those firms that are already operating in several countries. For these firms, including those in the distribution and retailing business, international trade is often intrafirm trade. Any restriction on the movement of food items within the firm will tend to cause problems for the firm, and hence will be resisted. But just as intrafirm movement of goods can be thwarted by government regulations, so too can the contractual obligations of firms that have come together in other forms of alliance. One would expect that those firms that have been pioneering supply chains, linking producers in one country to wholesale and retail outlets in another, would also find government restrictions on trade irksome. Thus one might expect these supply chains to add their voice to pressures for trade liberalization.

Many future changes in the global food system are in the direction of a more sophisticated agricultural industry, aware that future success depends on satisfying a variety of consumer tastes, and competing for a share of consumer spending with other goods and services (Moyer and Josling, 2002). As more actors become involved in the political process, the centre of gravity will shift perceptibly away from the primary producer. Policy will become less focused on unprocessed commodities, and the emphasis will switch to adding value to the raw material and marketing the final product. These changes will be crucial to the future of agricultural trade policy reform. In a world where farmers produce for the market, improvement in access to overseas markets can compensate in part for less domestic support. For those developing countries that can take advantage of the opportunities provided by the changing food habits of middle-class consumers, this could offer a way to use the food trade system as an engine of development.

9.5.2 The need for a consistent regulatory framework in global food trade

The process of globalization will increasingly require a consistent regulatory framework within which national regulations can be developed. At one level this is a technical task. National regulators need to iron out arbitrary differences that unnecessarily impede trade. But domestic bureaucratic and political pressures often complicate the technical task of avoiding incompatible regulations. Some vested interests exploit regulatory differences for the sake of furthering protectionist interests. Others, in the name of reducing costs, push for a degree of harmonization that may be inappropriate. Complicating the task of devising technical regulations for global markets is the tendency to see such issues as touching upon national sovereignty. Politicians are not keen to cede authority to regulate their domestic food supplies to outside agencies or other governments. Domestic regulatory agencies also cling to accepted practices and standards, in part out of inertia and in part as a way of ensuring bureaucratic survival.

The debate about the regulation of food supplies has been given increased prominence in recent years by a wide range of public-interest groups. Some have focused on issues of consumer health, both the prevention of diseases and the promotion of better nutritional habits. Others focus on social and political implications of food production systems or identify food consumption with lifestyle choices. Food issues have thus become part of a broader social discourse among groups with different objectives, particularly in the debate over globalization.

Coherence in global food regulations can be achieved more easily if national food regulations are reformed in a way that reduces the scope for trade conflicts. Technical trade barriers will play an increasing role in this context. Agricultural exporters may be required to demonstrate that native species or human health are not endangered by their products, while simultaneously complying with standards that stipulate everything from ingredients to packaging materials. The regulatory environment for agricultural and agro-industrial producers is likely to become more complex in coming years, even though reform initiatives are currently under way in many countries to reduce the number and the rigidity of regulations faced by the private sector. With rising per capita incomes, demands for food safety, environmental amenities, product differentiation and product information increase among developed and developing countries alike. More and more, regulators are being asked to provide these services when markets fail to do so (Josling, Roberts and Orden, 2002).

Measures that regulate imports of new agricultural products, ranging from new animal genetics to new disease-resistant seeds, have also spawned

disagreements between trading partners. New products, particularly GM commodities, have been at the centre of the most prominent recent debates over technical barriers to trade, as some importing countries consider genetic modifications to pose a risk to consumers or to biodiversity, or to violate ethical norms. Trade officials are drawn into the debate when exporters believe that lengthy regulatory review of new products is motivated by a desire to protect the commercial interests of domestic producers in importing countries, rather than by concerns about the safety of consumers or quality of the environment. There is reason to expect that in the near future the number of agricultural product and technology innovations, and the number of measures to regulate their entry into importing countries, will increase. Technical barriers will therefore remain an important topic of discussion in the international regulatory and trade policy arena well into the foreseeable future.

Food trade regulation is also becoming a major issue for developing countries and their role in the global economy. In particular, trade in processed food products will be of growing interest to developing countries. Exporters are finding the increase in value added a useful way of avoiding the "raw-material" trap, while importers need processed food products to meet the increasing demand for them. Decisions about the use of agricultural biotechnology to increase productivity, and the provision of technical assistance to permit developing countries to meet the high food standards in developed countries can have a major effect on their opportunities for trade and development.

9.5.3 Trade and international standards

As traditional market access barriers such as tariffs and quotas are reduced, the restrictions caused by safety and quality standards will become more apparent and important in determining an exporter's ability to gain access to markets. The WTO SPS Agreement governs the use of safety regulations in agricultural trade. Other quality attributes are covered under the Agreement on Technical Barriers to Trade (TBT) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Environmental protection measures, which were given the same status in the Doha Declaration as the protection of the life and health of animals, plants and humans, may be proposed during the negotiations as a basis for restricting trade. The SPS and TBT Agreements will not be renegotiated in the current talks (see Box 9.1 for an explanation of the SPS and TBT Agreements), but implementation issues related to these Agreements will be taken up, such as the need for longer transition periods and technical and financial assistance for developing countries.

These Agreements attempt to strike a balance between the concerns of importers and exporters. Importers wish to enforce quality and safety standards to protect the life and health of their people, plants and animals. Exporters have the right to expect such standards to be transparent, science-based and no more trade restrictive than necessary to meet the stated objective. In practice, balancing these concerns is very difficult. Science is not static, since knowledge evolves. Moreover, even where risk levels are known with scientific accuracy, their acceptability varies over time and between societies.

Since the WTO Agreements came into force, 18 separate cases involving safety or quality attributes of agricultural products have been filed under WTO dispute settlement procedures. Of these, five were settled bilaterally, three have been resolved through dispute settlement Panel and Appellate Body decisions, and the remaining ten are awaiting final resolution. Of the three "resolved" cases, the most contentious was the one launched by the United States and Canada over the EU's ban on the use of hormones in beef production (both for imported beef and beef produced within the EU). The Panel and Appellate Bodies found that the EU's ban on imports of beef produced using artificial growth-promoting hormones was not justified under the SPS Agreement because it was not based on a scientific risk assessment and there was not enough scientific evidence to support the ban. Since the EU has continued to ban such imports despite the results of the dispute settlement process, the complainants have the right to seek compensation by imposing higher tariffs on their imports from the EU equal to the value of the trade impairment suffered as a result of the ban. Thus, while this case has officially been resolved, it clearly has not resulted in a satisfactory

Box 9.1 The SPS and TBT Agreements

The two pillars on which the multilateral rules for food safety are built are the Sanitary and Phytosanitary (SPS) Measures Agreement and the Technical Barriers to Trade (TBT) Agreement. The SPS Agreement rests on two premises: that basing national standards on international norms would reduce conflicts and lower transaction costs; and that requiring scientific justification for standards that deviated from these international norms would make it more difficult for countries to shelter domestic industries behind unnecessarily restrictive health and safety regulations. In addition to setting out the rights and obligations of WTO Members, the SPS Agreement also establishes enforcement mechanisms. These mechanisms include notification procedures for informing other WTO Members of changes in SPS measures, the establishment of an SPS committee to discuss these issues on a continuing basis, and the use of WTO dispute resolution mechanisms for resolving conflicts between countries in a timely manner. These mechanisms include formal consultations between the parties to a dispute, followed by adjudication by a WTO panel and the WTO Appellate Body if required. Regulations that aim at protecting people, animals or plants from direct and definable health risks, such as the spread of disease, potentially allergic reactions or pest infestations, are covered by the SPS Agreement.

The TBT Agreement covers all other technical regulations. Like the SPS Agreement, the TBT Agreement aims to distinguish measures that are necessary for achieving some regulatory objective from disguised trade protection. Specifically, the TBT Agreement extends the GATT principles of national treatment and most favoured nation obligations. As under the SPS Agreement, the TBT Agreement also stipulates that countries avoid unnecessary trade impediments. Beyond these general trade-promoting provisions, the TBT Agreement is on the face of it more permissive than the SPS Agreement. The TBT Agreement does not limit a government's right to impose domestic trade restrictions when pursuing a legitimate goal in a non-protectionist way. The key provisions of the TBT Agreement define the basic concepts of "legitimate goals" and "non-protectionist actions" related to technical regulations promulgated by central government bodies. According to these provisions, an import regulation has to meet two conditions. First, the regulation should aim to fulfil a legitimate objective and, second, there should be no other less trade-restrictive measure available to fulfil the legitimate objective. The combination of "legitimate objective" and "least trade-restrictive" conditions form the core of the disciplines on domestic regulations imposed by the TBT Agreement. But whereas the SPS Agreement clearly requires a sufficient scientific basis for the measure in question, the TBT Agreement appears to set less strict standards and allows more discretion. However, technical regulations that refer in their objective to issues of a scientific nature are subject to evaluation based on the scientific knowledge available (Heumueller and Josling, 2001).

The TBT Agreement includes food regulations. Although it has played less of a role in food-related technical barrier trade disputes than the SPS Agreement, many of the current controversies have to do with the product and process attributes of food and not directly their safety. In the area of food quality, the TBT Agreement is most germane. Moreover, as countries find that their controversial food regulations are subject to successful challenge under the SPS Agreement, they may frame their objectives in a way that brings the measure under the TBT Agreement. The nature of the global food sector suggests there are rents to be attained from labelling and origin-identification regulations. Trade conflicts may well shift towards issues of the labelling of quality attributes and away from the more traditional health and safety issues.

solution either from the point of view of the parties to the dispute or from the institutional perspective of promoting a fair and transparent trading system.

Considerable time and cost are involved in pursuing a case through the WTO dispute settlement procedures and, as the beef hormone case illustrates, the final result of the process may be unsatisfactory. A number of countries have suggested that importers are increasingly using SPS and TBT measures as disguised protectionism. This point was raised in several FAO country case studies (FAO, 2000e) and has been mentioned in proposals submitted to the ongoing agriculture negotiations (WTO, 2000f and 2001c). On the other hand, a number of countries have indicated that consumer safety and the protection of traditional food applications are increasingly important for them (WTO, 2000c and 2000e). This suggests that issues related to food safety and quality will become a source of increasing tensions in the agricultural trading system.

Health and safety standards. All governments accept responsibility for guarding the safety of the nation's food supply and the health of its plant and animal populations, and many also undertake to ensure food quality and to provide information to consumers as they make food-purchase choices. Yet countries face very different circumstances in their markets for food, and consumers can have vastly different concerns and susceptibilities. As a result, countries have developed quite diverse systems of regulations to safeguard plant, animal and human health, to ensure food product quality, and to provide consumer information (for a more comprehensive discussion, see Josling, Roberts and Orden, 2002).

As economies open up to trade there is increasing potential for conflicts to arise from the different ways of providing for food-related health and safety and from the differing levels of health protection afforded by food systems among countries. Trade conflicts can also arise from those aspects of food regulations that are not directly related to health. Firms selling processed farm products are motivated to seek protection for their trademarks and the image of their products, setting up potential conflicts with new entrants in the market. Many consumers expect basic nutritional or other information to be readily available, although this again can lead to charges of protection for domestic producers. Affluent consumers have also begun to take a greater interest in how their food is produced, i.e. whether the farms use environmentally sound practices, whether pesticides and other chemicals are used, and how animals are treated. Demands for regulations that impose standards in these areas add to the pressures on governments and increase the potential for trade conflicts. The emergence of new methods of production, such as the use of advances in biotechnology to "design" plants and animals, poses further regulatory challenges.

Trade conflicts over health, safety and quality standards are not new, but increased globalization of the food and agricultural sector has made these conflicts more visible. Governments need to handle these conflicts in a way that both upholds public confidence in food safety and product standards and preserves the framework for trade and the benefits of an open food system.

Environmental and labour standards. As noted in previous chapters, the production increases in prospect at the world level for the period to 2030 are significant. Thus, almost another billion tonnes of cereals must be produced annually by 2030, another 160 million tonnes of meat, and so on. This also means that pressure on resources and the environment will continue to mount. The challenge is how to produce the required increases of food in sustainable ways, while keeping adverse effects on the wider environment within acceptable limits.

The agro-ecological environments of individual countries differ in their ability to withstand adverse effects associated with increasing production, either because they are inherently more or less resilient or have more or less abundant resources or because such resources at present are more or less stretched from the past accumulation of stresses. Countries also differ as to their technological and policy capacity for finding solutions and responding to emerging problems.

Trade can help to minimize adverse effects on the global resource system, if it spreads pressures in accordance with the capabilities of the different countries to withstand and respond to them. Whether it will do so depends largely on how well the prices of each country reflect its "environmental" comparative advantage. This requires that, in addition to the absence of policy distortions that affect trade, the environmental "bads" generated by production be embodied in the costs and prices of the traded products. If all countries meet these conditions, then trade will contribute to minimizing the environmental "bads" globally as these are perceived and valued by the different societies, although not necessarily in terms of some objective physical measure, e.g. soil erosion, loss of biodiversity, etc. This latter qualification is important, because different societies can attach widely differing values to the same environmental resources relative to those of other things, such as export earnings, employment, etc. In the end, the values of environmental resources relative to those of other things are anthropocentric concepts and countries at different levels of development, of different cultural backgrounds and resource endowments are bound to have differing priorities and relative valuations.

Attempts to impose uniform environmental standards can stand in the way of countries profiting from trade based on their relative endowments of environmental resources. This may happen as agricultural policies are "greened", and pressure increases for multilateral rules that constrain countries with less restrictive environmental standards. This could act as a further hindrance to developing country exports, many of which might not face the same environmental pressures that agriculture in, say, northern Europe may have to contend.

Environmental regulations are likely to have the strongest impact on those agricultural activities that have the closest links with broad transnational environmental objectives, such as mitigating climate change and conserving oceanic resources. Thus fisheries and forestry may be more directly affected than agriculture. But more localized pollution issues such as pesticide runoff and water quality could still be important issues for crop and livestock agriculture in the future. Intensive livestock rearing may well have to absorb significant extra costs as countries strengthen their environmental regulations, and attempt to restrict trade from those countries without such regulations. And if the environmental impact of GMOs turns out to be more serious a problem than many scientists now assume, the next two decades could see a raft of new restrictions on the use of this technology that may prevent its spread and adoption.

At present it looks unlikely that the Doha Round of trade talks will establish any significant new rules on environment and trade. More likely is an agreement that clarifies the relationship between disciplines under WTO and those that might be undertaken in the context of a multilateral environmental agreement (MEA). The potential conflicts have been increased by the attraction of trade sanctions as ways of enforcing MEAs. Eventually one of these conflicts could have a damaging impact on the credibility of WTO and the trade system. Attempts to agree on the areas of overlap, such as allowable sanctions, are likely in the next few years.

The Doha Round has not included the contentious issue of labour rights on its agenda. Countries have been reluctant to do so since the Seattle Ministerial meeting, at which labour standards played a role in the collapse of the talks. The likelihood is, however, that a closer relationship between the International Labour Office (ILO), with its "core labour standards", and WTO will be established. One would expect the debate on the extension of the ILO core standards away from human rights towards economic rights to be contentious, and it is possible that agriculture could be caught up in this debate. Currently there have been few conflicts that have emerged on the international agenda (as opposed to the domestic political landscape) on the issue of labour standards in agriculture.[23] But this situation may not last for the next three decades.

Trade and the conditions of competition. A new area on the Doha agenda is the issue of trade and competition. With increasing globalization it is clear that pressures will continue for some degree of harmonization in these policy areas. If the Doha Round were to establish some basic rules in this area, it could take another ten years thereafter to have them in place. Thus, within the timeframe of this study, the emergence of a set of rules governing the competitive behaviour of governments and firms is quite possible. Intellectual property protection was introduced in the Uruguay Round.

A global trade system may need global competition rules. But the way in which those rules will develop is not clear at present. While some are calling for full-scale negotiations on international competition policy, others maintain that the most that can be done is to make sure that each trading country has its own antitrust policy in place. But the minimalist approach is unlikely to be satisfactory for very long. The best policy for curbing misuse of market power in any one country is an open trade system. But the very openness of the trade system allows large firms to develop market power in the world market. Global competition policy should be more about market power in world markets than about enforcing competition policy in each national market.

An emerging competition issue is the concentration of market power in the agrofood distribu-

[23] One recent example is that of the use of child labour in the harvesting of cocoa in Africa. Firms are instituting voluntary schemes to avoid such practices, in large part to avoid the consumer reaction that took place in the footwear and clothing industries.

tion chain. This has two separate but related aspects. One is the use of market power by public agencies or by parastatals, given their ability to act in a restrictive way. This issue of "state trading" is coming to the fore in trade talks. It represents a concern among those countries that do not practise state trading that those that do can gain an "unfair" advantage through hidden export subsidies and import barriers. The issue of competition is also at the heart of another potential problem facing the agrofood system. Concentration of economic power is not only confined to public agencies that have monopoly rights in importing or exporting. Private firms can have significant market power to influence prices and the pattern of trade through restrictive business practices. Should there be any rules relating to the use of market power in international markets? What dangers should such rules try to prevent? Is the problem the withholding of supplies to raise the price of commodities? This seems relatively unlikely in the case of basic foods, but could happen with vital supply components. Or is the problem one of dumping and market disruption? The incorporation of antidumping rules in a set of more comprehensive competition regulations is the object of many trade economists. Whatever is agreed will have significant implications for global agriculture.

Trade-related aspects of intellectual property. Less central than the SPS and TBT Agreements but still important in the framework of multilateral food regulations is the TRIPS Agreement. The Agreement imposes on member countries an obligation to provide a minimum standard of protection to a range of intellectual property (IP) rights, including copyrights, patents and trademarks.[24] Two aspects are particularly important in the global food regulatory framework, namely the requirement to respect geographic indications, which are widely used in the wine and spirit sector as well as in cheese and other processed food industries, and the obligation to provide protection to new plant varieties (although not necessarily by patents) and to innovations in the area of microbiology.

The issue of the patentability of plant and animal varieties, as well as of GMOs, raises questions beyond the mere protection of IPR, such as questions concerning the rights of local communities and indigenous peoples, and the sovereign rights over natural genetic resources, biosafety and food security.[25]

The TRIPS Agreement is having a marked effect on the shape of domestic IP regulations, as it was designed to do. Although it is not harmonizing these regulations, it is establishing a template into which domestic regulations must fit. The objective is to avoid trade conflicts that inevitably arise if different countries have different coverage and use different instruments for IP protection. The provision of IP protection does not always facilitate trade since, by providing protection to existing rights holders, new entrants are discouraged. Overprotection can be a problem in this area of food regulation as well as in health and safety issues (see Box 9.2). In addition, IP protection holds significant implications for access to and transfer of technology, particularly to the developing countries. Access to most protected technologies and products, particularly in the seed and biotechnology area, is subject to the terms of licensing agreements dictated by a very small number of enterprises.

Multilateral disciplines for labelling regimes are set out in both the SPS and TBT Agreements of WTO. The TBT rules apply to all safety and quality labelling regimes, except those defined as an SPS measure, i.e. "labelling requirements that are directly related to food safety". Article IX of GATT establishes rules for marks of origin. The international rules for protection of IPR in the form of geographic indicators are also germane to understanding the WTO framework for the governance of information provision. The TRIPS Agreement sets out importers' obligations to protect geographic indicators, which are increasingly used to differentiate agricultural products in domestic and international markets. Resolution of conflicts under the TRIPS Agreement is subject to the WTO Dispute Settlement Mechanism.

[24] The three main intellectual property instruments are copyright, for artistic and literary works; patents and similar devices for inventions, industrial designs and trade secrets; and trademarks, signs and geographic indications for commercial identification. The rights holder is given exclusive ownership or user rights for a specified (in some cases indefinite) period of time. The TRIPS Agreement incorporates and extends previous intellectual property arrangements including the Berne Convention and the Paris Convention, as well as those administered by the World Intellectual Property Organization (WIPO).

[25] The Convention on Biological Diversity deals with most of these issues. In addition, the International Treaty on Plant Genetic Resources for Food and Agriculture provides for the conservation and sustainable use of genetic resources for food and agriculture as well as for the fair and equitable sharing of benefits arising from their use, in harmony with the Convention on Biological Diversity.

Box 9.2 Overprotection of intellectual property can present a threat to trade

The basic idea behind the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) is to avoid trade conflicts that can arise when countries rely on different instruments for the protection of intellectual property rights (IPR). To accomplish this goal, the TRIPS Agreement provides common guidelines for national legislators to design domestic rules and regulations for the protection of IPR, which are largely comparable and thus compatible with the legislation of trading partners.

In practice, however, there are a number of factors that impede rather than facilitate trade, particularly in the case of agricultural trade between developed and developing countries. First, obtaining IPR is a costly process, too costly for many developing countries, particularly for internationally recognized patents. Moreover, many developing countries fail to establish and protect their IPR simply because they are unaware as to what innovations are patentable. Similarly, as the number of patents and cross-patents held in countries abroad rises, many developing countries may simply not be aware of possible infringements of IPR that are held by trading partners abroad. Finally, the ability to obtain IPR and to earn royalties from these rights has created incentives to obtain patents for hitherto unprotected germplasm, including by private players from countries abroad. This practice is often referred to as biopiracy, particularly when patents are acquired after only marginal alterations of the original germplasm.

An interesting case in point is the trade conflict that has emerged out of a United States patent on a dry bean variety (the so-called Enola bean) that originated from Mexico. The conflict started when a United States plant breeder bought a small amount of dry bean seed in Mexico in 1994 and brought it back to the United States. He selected the yellow-coloured beans and multiplied them over several generations until he obtained a "uniform and stable" population. In 1999, the United States Patent and Trademark Office (PTO) granted a patent on the yellow beans, and a United States Plant Variety Protection Certificate followed shortly afterwards. Soon after the patent and Plant Variety Protection Certificate were issued, the plant breeder brought legal suits against United States trading companies that imported yellow beans from Mexico. He now asks for royalties to be paid on all yellow bean imports to the United States or otherwise to block yellow bean imports.

This controversy also illustrates that the current practice of IPR protection can have rather serious effects on trade flows. Similar controversies in other areas, notably over South Asian basmati rice, Bolivian quinoa and Amazonian ayahuasca (Indian chickpeas), suggest that agricultural exports from developing countries could be particularly strongly affected. The potential for future trade conflicts is significant. An increasing number of patents and cross-patents in the new transgenic plant varieties and the rapid growth in trade in transgenic organisms mean that IPR protection could have massive impacts on future agricultural trade flows. Given the fact that the IPR for most modern GM varieties are in the hands of developed-country companies, a large share of developing countries' agricultural exports could be subject to royalty surcharges or face import barriers in markets where these rights are protected.

9.6 Summary and conclusions

The agricultural trade of developing countries has seen a number of important changes. Agricultural exports grew much more moderately than exports of manufactures, resulting in a dramatic decline in the share of agricultural exports from about 50 percent of total exports in the early 1960s to less than 7 percent by 2000. Despite this overall decline in importance, some countries continued to rely heavily on agricultural exports whereby single commodities such as coffee, cocoa or sugar can account for more than half of total foreign exchange earnings.

The surplus in the overall agricultural trade balance of developing countries has virtually disappeared over the past 40 years, and the outlook to 2030 suggests that, as a group, they will increasingly become net importers of agricultural commodities. The group of LDCs already underwent this shift 15 years ago. Their agricultural imports are already twice as high as their agricultural exports. The trade balance of the LDCs will further deteriorate, and their current trade deficit will quadruple by 2030. Within agricultural trade, developing countries recorded a growing trade deficit for temperate-zone commodities, while their trade surplus for tropical products grew only

moderately. The trade balance for competing products remained largely unchanged.

These shifts in trade flows have been brought about by market factors and policy influences. On the market side, income and population growth have fuelled robust growth in demand, which could not fully be matched by domestic supply. On the policy front, subsidies and protection in developed countries as well as taxation and industrial protection in developing countries augmented the effects that arose from the market side. Numerous studies suggest that the importance of policy effects is small relative to the effects of market forces and that policy reforms, at least if limited to the developed countries only, would not significantly alter the overall trade picture. These studies also show that the largest portion of welfare effects from freer trade and policy reform in developed countries would accrue to the developed countries themselves.

An analysis of the impacts of OECD policy reform confirms the rather limited impacts of policy factors, at least if policy changes are limited to the agricultural sector of developed countries. If developing countries also embarked on comprehensive reforms reaching beyond agriculture, the benefits could be more significant, with the major part of the additional gains going to developing countries. Farmers in developing countries could benefit the most from domestic reforms that encompassed a removal both of the direct bias against agriculture through taxation, and of indirect bias caused by macroeconomic distortions and industrial protection.

The reduction of OECD farm support may not be sufficient and may perhaps be of only limited benefit to developing countries. However, developing countries are likely to gain substantially from other reform measures, like a move towards a "de-escalation" of tariffs; abolition of consumer taxes; further reduction of the bias against agriculture in their own countries; more and deeper preferential access for the poorest of the poor (LDCs); and open borders for foreign direct investments (FDIs) to enable developing countries to compete more efficiently in international markets (see Chapter 10).

High priority should be given to investments in infrastructure to lower transaction costs for exports, and to investments that help enhance the quality of goods and allow developing countries to meet rising quality standards in international markets. Such investments could be most beneficial for products where developing countries have a comparative advantage, such as fruit and vegetables.

Future developments in the international trade policy agenda will be strongly affected by the speed and extent of farm policy reform in OECD countries. Most developed countries are currently modifying the method of giving protection to farmers in the direction of less trade distortion, although overall support levels remain high. But the crucial questions are to ascertain to what extent the reforms will be permanent, and whether they are the manifestation of a new paradigm, which takes government out of the game of supporting commodity prices and making farming decisions.

The next 30 years may also see a shift in focus within the overall trade agenda. As traditional market access barriers such as tariffs and quotas are reduced, the trade agenda is likely to shift away from traditional issues such as export competition or enhancing market access towards trade restrictions caused by safety, quality or environmental standards. Moreover, as a growing share of trade will be handled through ever larger and more transnationally active companies, there will be a growing need to establish global competition rules. A global marketplace will also augment pressures to work on global rules for the protection of IPR and of geographic indications. In parallel with the shift towards these new trade issues, the importance of the various WTO agreements is likely to change. Future trade negotiations will focus more on details in the SPS, TBT or TRIPS Agreements, and less on the rules and regulations set out by the Agreement on Agriculture.

This shift in the focus of the trade agenda will be accompanied by a change in the relative importance of countries within the multilateral trade negotiation process. Hitherto, the importance of new and emerging issues was largely confined to developed countries and thus the agenda has mainly reflected developed countries' trade concerns. Now developing countries are having an increasing influence on WTO and its deliberations. But at the same time the cohesion among developing countries is itself being weakened. Some see advantages in firm rules on intellectual property protection, while others fear that they will lose the ability to pursue traditional farming practices.

Splits have also arisen over traditional trade issues, notably between those countries that import agricultural goods and those whose main interest is in expanding export markets. Some developing countries wish to retain preferential access to developed country markets, while others see such arrangements as mainly harming other developing countries. Over the next 30 years there is a danger that these divisions may become more pronounced. Countries that are not integrating within the mainstream of the world economy may find themselves poorly served by the global trade system. By contrast, those that play a full role in the global economy will increasingly make use of trade facilitation in such areas as services, intellectual property and investment rules.