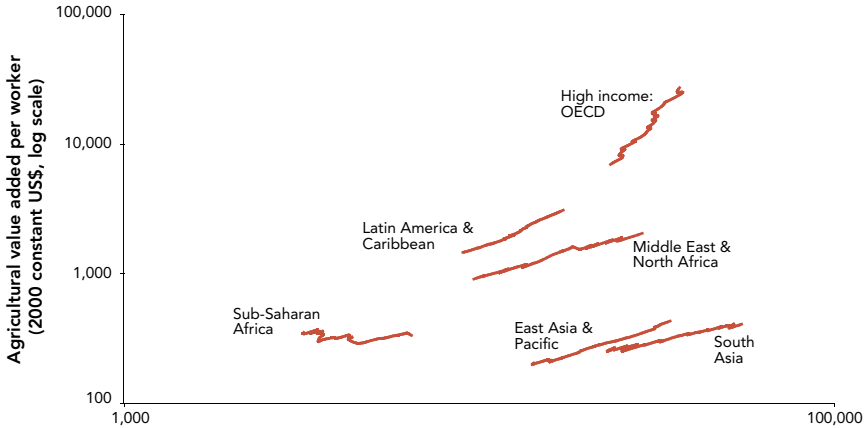
AGRICULTURE

Growth in land and labour productivity, by region, 1971-2003



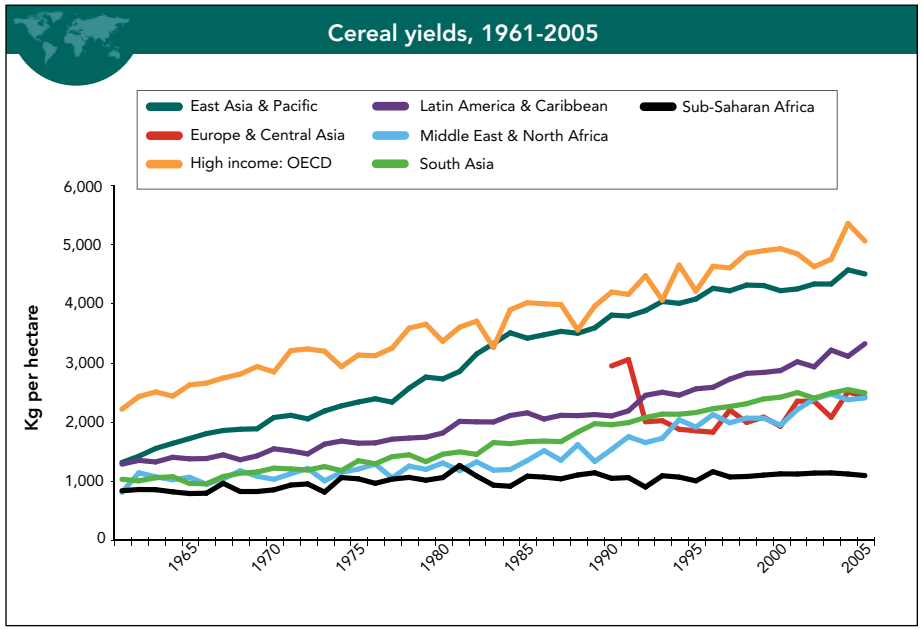
Source: Based on data from the World Bank's World Development Indicators online database.

Improvements in agricultural productivity have been fairly widespread, but significant gaps between regions remain

Factors that have driven agricultural land and labour productivity trends include the Green Revolution in Asia, resettlement policies in Latin America, and environmental conservation programmes in developed regions. But a key determinant is the relative scarcity in each region of land, labour and capital. These endowments have favoured investment in land-saving R&D in Asia and labour-saving R&D in North America.

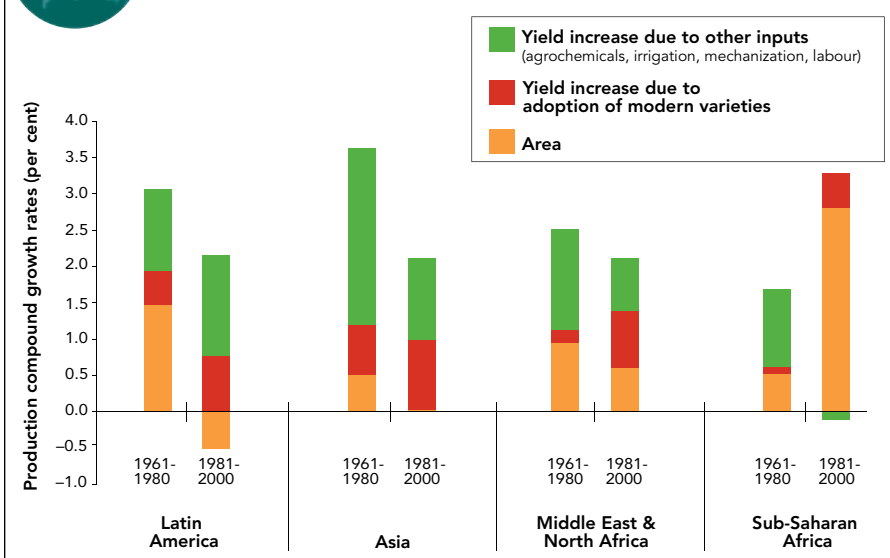
High-income OECD countries with limited supplies of land and labour (especially in Western Europe) show high and increasing land and labour productivity. Asia, with little additional land and abundant labour, has shown high and increasing land productivity but low labour productivity. Sub-Saharan Africa has low productivity in both dimensions, with some limited progress in land productivity but virtually none in labour productivity as its labour force grows rapidly.[3]

Cereal yields, 1961-2005



Source: World Development Indicators online database.

Sources of production growth (expansion of cultivated area versus yields) for major staple crops (cereals, roots and tubers and pulses), 1961-2000



Source: Evenson and Gollin (2003).

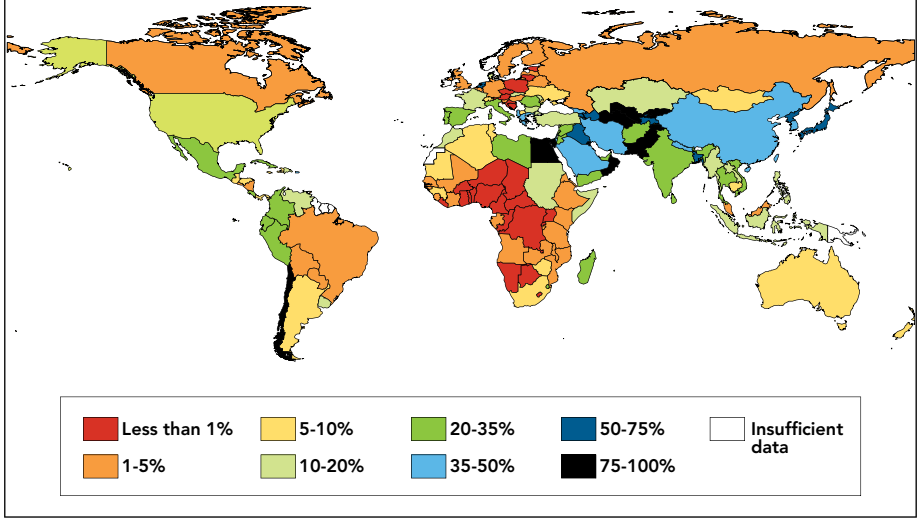
Improved varieties have been a major contributor to growth in staple crop production in the developing world, except in Africa

Many farmers around the world, and particularly in Africa, still grow mostly food staples for their own consumption and to supply domestic and regional markets.

In contrast to the rest of the developing world, production growth in sub-Saharan Africa since 1981 was based almost entirely on extending the area under cultivation. The limited scope of the Green Revolution in sub-Saharan Africa was in part due to the mix of crops grown, in part due to difficulties in producing improved varieties suitable for local growing conditions in the region. Varietal improvements have begun to make an impact in rice, maize, cassava and other crops, with public institutions acting as key facilitators of innovation and diffusion.[4]

> "Most of the world's poor people earn their living from agriculture, so if we knew the economics of agriculture, we would know much of the economics of being poor."
>
> —Theodore W. Schultz
> Nobel Prize Laureate in Economics

Share of cropland under irrigation

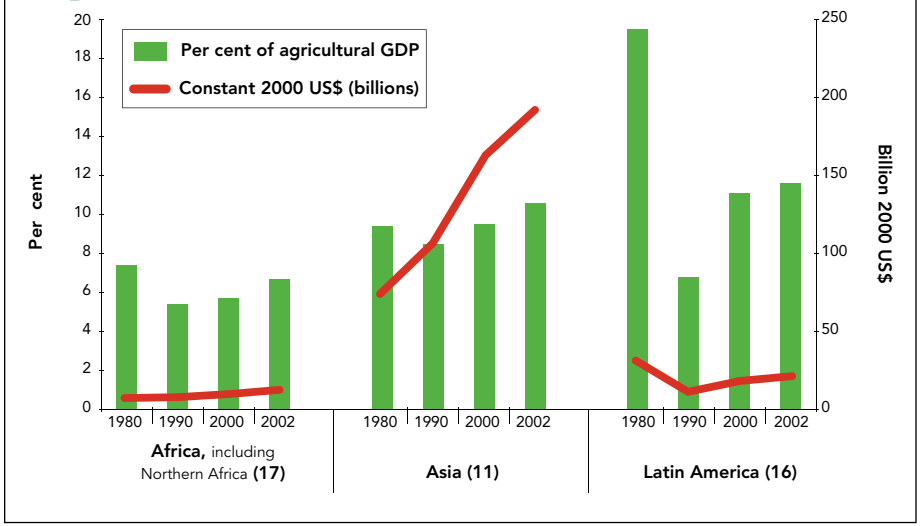


Source: World Bank (2007).

Irrigation is far more extensive in Asia than in sub-Saharan Africa

Irrigation can lead to improvements in farm income through increased yields and/or diversification into higher-value crops. In Asia, low-potential, rain-fed regions consistently show the highest returns to irrigation. This suggests that there are potentially high returns to investments in irrigation in parts of Africa where irrigation is still extremely limited. Irrigation development in Africa could also contribute significantly to reducing income volatility and alleviating poverty, as rural poverty is dominated by smallholders.[5]

Public expenditure in agriculture (as a share of agricultural GDP and in constant 2000 United States dollars), 1980-2002



Source: Akroyd and Smith (2007) on the basis of data from Fan and Saurkar (2006).

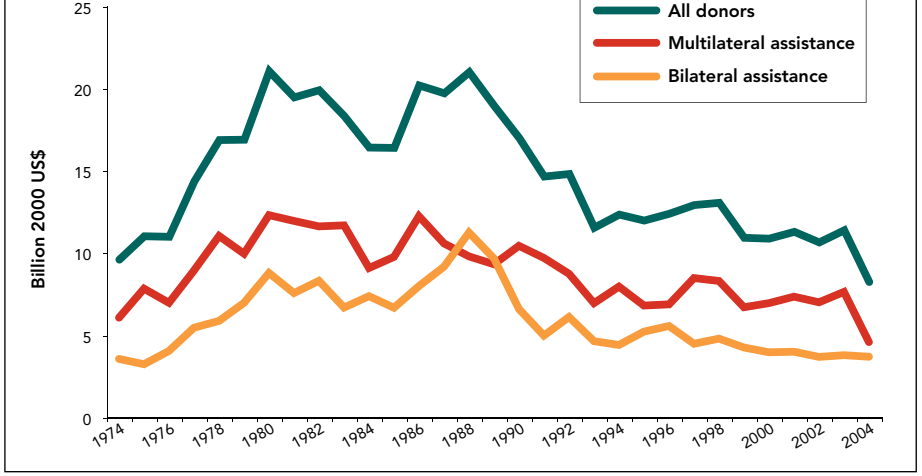
Note: Numbers in parentheses correspond to number of countries in the sample for each region.

Only in developing Asia has public spending on agriculture risen steeply over the past generation

In many African countries, spending on agriculture relative to GDP is well below the target set by the 2003 Maputo Declaration of Heads of State and Government of the African Union, which establishes that 10 per cent of budgetary allocations should go to agriculture and rural development by 2008.

Only in Asia has spending increased relative to GDP over the 1980-2002 period, as the result of a near tripling in real terms. The relative decline is most dramatic in Latin America, the only region where expenditures declined in absolute terms, although there has been a recovery between 1990 and 2002.[6]

External assistance to agriculture, 1974-2004



Source: Based on FAOSTAT data.

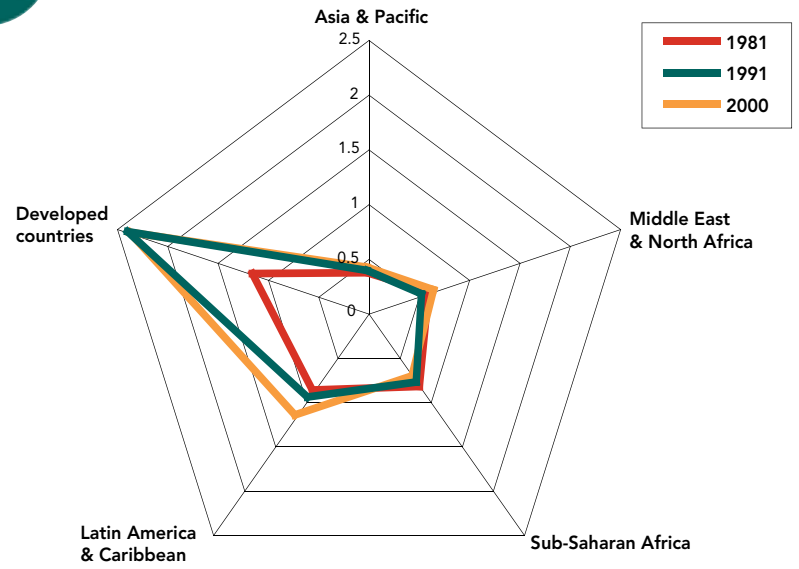
Note: Current United States dollar values were deflated using the United States GDP deflator from the World Development Indicators online database. "External assistance to agriculture" does not include food aid and other technical cooperation provided in kind. The term "agriculture" is used in a broad sense to include forestry, fisheries and rural development.

External assistance to agriculture has been on the decline since the 1980s

A number of studies show positive growth and poverty reduction effects from public spending in agriculture and rural development. At the same time, many low-income countries depend on external assistance for agriculture.[7] Yet, external commitments in real terms have steadily declined since the 1980s. Multilateral assistance has declined proportionately much more than bilateral assistance.

> **"Feeding the majority of the poor and vulnerable populations in Africa, while preserving the natural resource base and the environment, is one of the most pressing development challenges of the twenty-first century."**
>
> **—Akin Adesina, AGRA**

Public expenditures on agricultural research as a percentage of agricultural GDP, 1981, 1991 and 2000



Source: Pardey and others (2006).

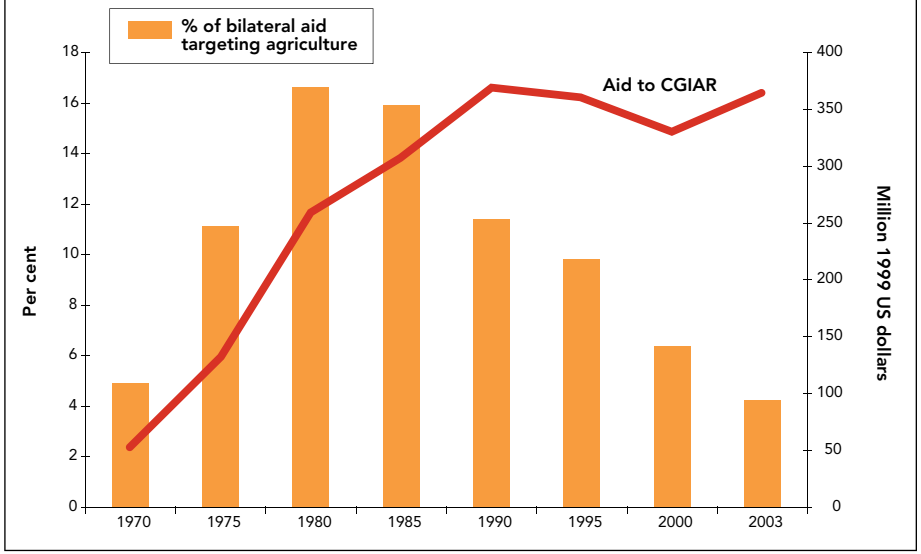
Note: Data are estimates and exclude Eastern Europe and the countries of the former Soviet Union.

Developing countries now spend more in total on agricultural R&D than developed countries, but most takes place in only three countries: China, India and Brazil

While there is a large private presence in developed countries, in developing countries the private sector accounted for only 6 per cent of total R&D spending in agriculture as of 2000 (as opposed to over 50 per cent in developed countries) and generally targeted export crops.

In 2000, developed countries as a group spent US$ 2.4 on public agricultural R&D for every US$ 100 of agricultural output, eight times more than in developing regions. In the latter, research intensities have risen somewhat in the past two decades, with the exception of Africa where the intensity has declined.[8]

External assistance to agricultural R&D, 1970-2003

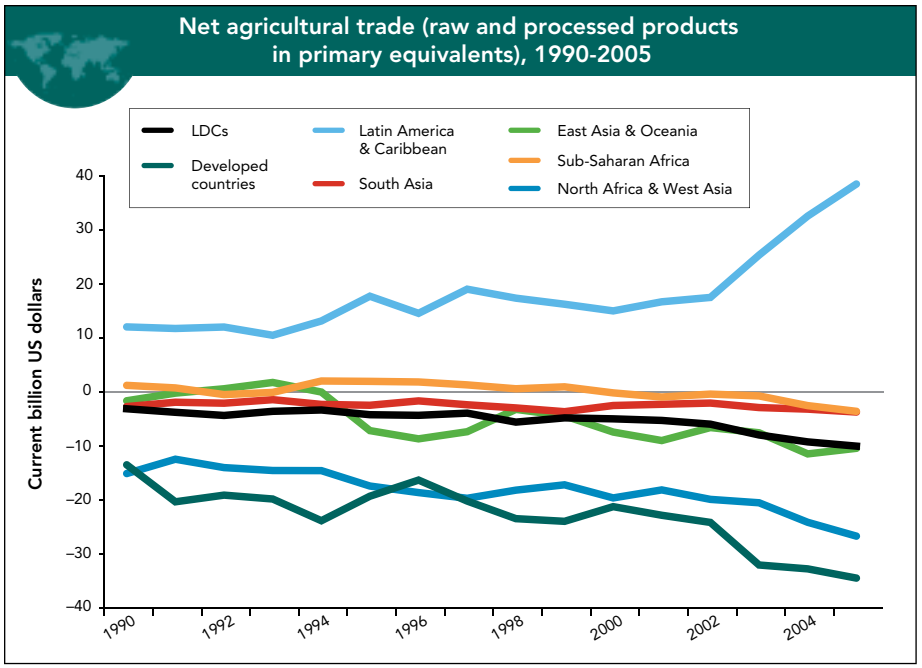


Source: Pardey and others (2006).

Note: CGIAR is the Consultative Group on International Agricultural Research.

Agricultural R&D in developing countries, especially in Africa, has suffered from shifting donor priorities

Development assistance has been an important source of funding for agricultural R&D, including through sponsorship of CGIAR (Consultative Group on International Agricultural Research) research and in underwriting national R&D efforts in some developing countries. Since the 1980s, however, there has been a strong shift away from agriculture in bilateral aid funding priorities. As a share of all bilateral assistance, agriculture fell from over 16 per cent in 1980 to only 4 per cent in 2003. CGIAR funding, which was pivotal in developing Green Revolution technologies, grew markedly from the 1970s but has been stagnant since 1990.[9]



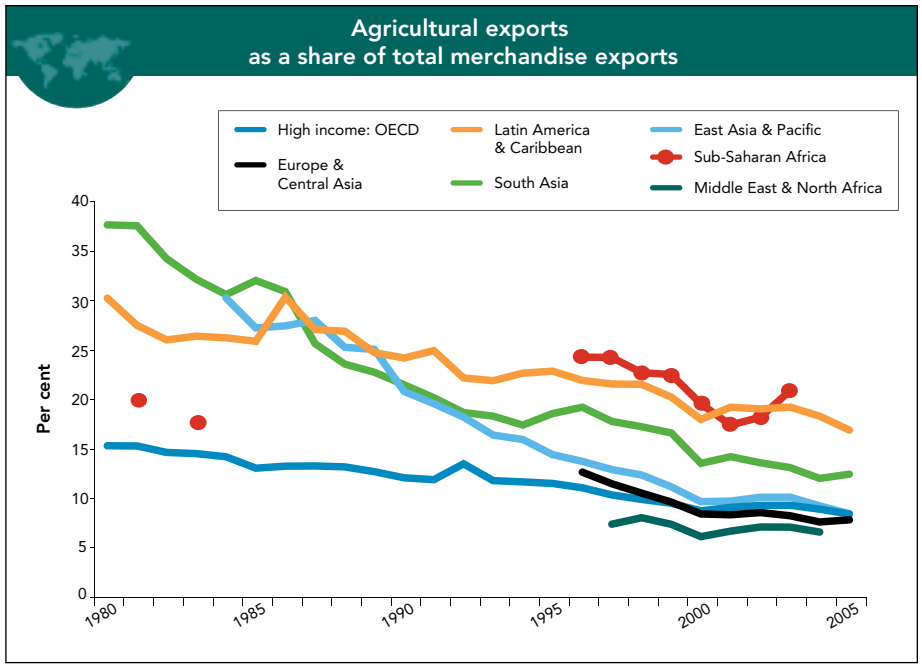
Source: Based on FAOSTAT data and country classifications.

Note: Developed countries include countries with economies in transition.

Latin America stands out as a large and fast-growing net agricultural exporter

Latin America and the Caribbean has seen a widening of its agricultural trade surplus, starting around the mid-1990s. Conversely, East Asia and Oceania and sub-Saharan Africa have become net agricultural importers, while the deficit of Northern Africa and West Asia shows no signs of diminishing. The same holds for developed countries as a group. By the end of the 1990s, LDC imports were more than twice as high as exports.[10]

> "More countries are contesting agricultural export markets and have increased their competitiveness and their share of the market."

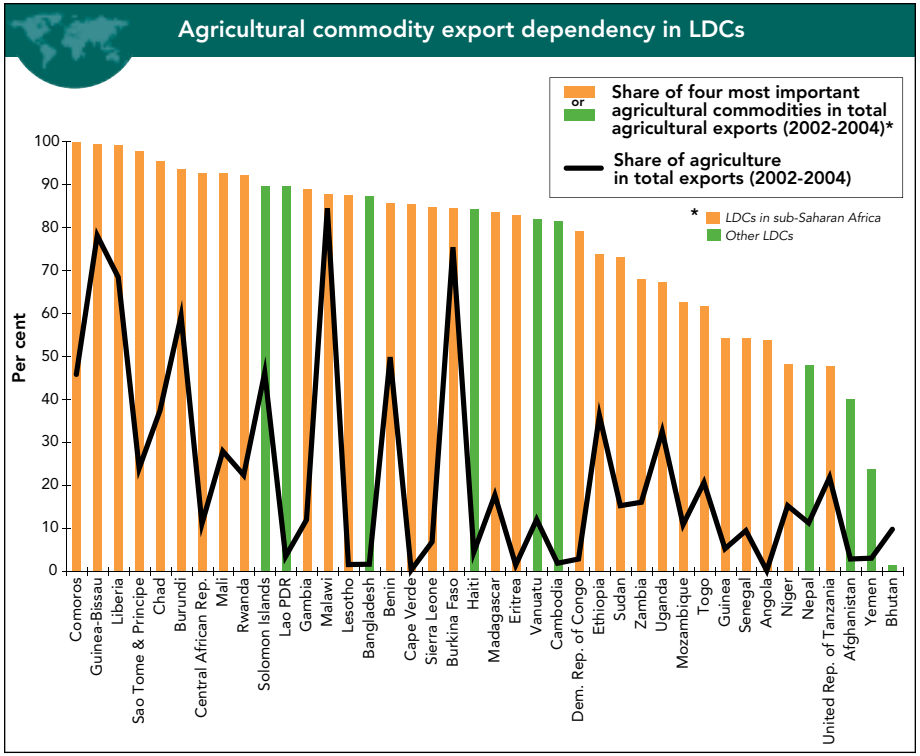


Source: World Development Indicators online database.

Note: Agricultural exports share = Share of agricultural raw materials exports + share of food exports.

Reliance on agricultural exports has been declining globally but remains high in some regions of the developing world

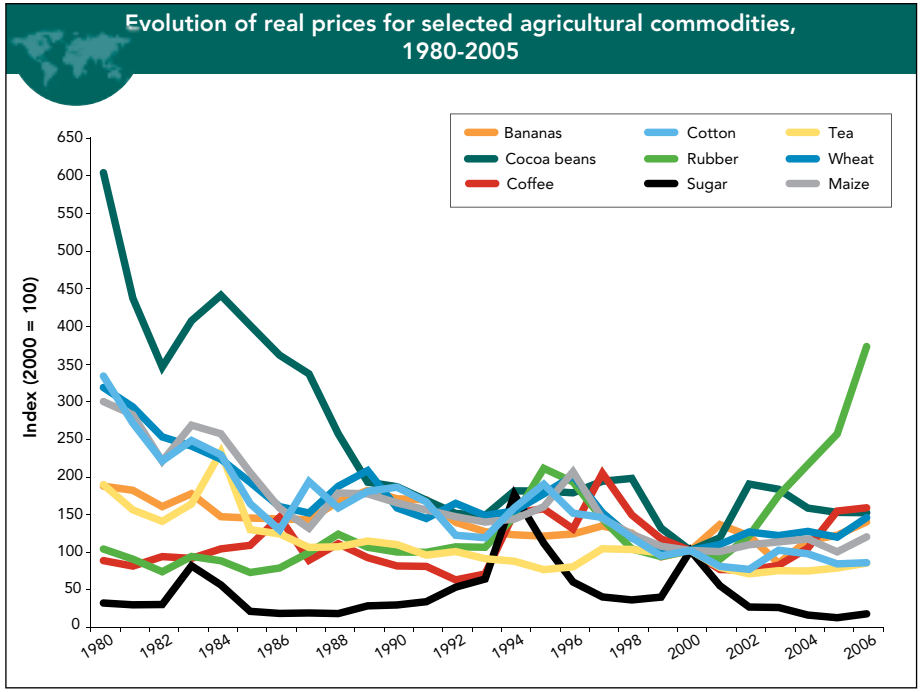
The downward trend has been particularly pronounced in South Asia and East Asia and the Pacific, where on average reliance on agricultural exports is on a par with OECD countries. While less pronounced, in Latin America the share of agricultural exports in total merchandise exports has declined by roughly half over the past quarter-century. In sub-Saharan Africa, that share was only slightly reduced from 1980 to 2005. These regional averages mask large differences between countries and are strongly influenced by the specialization pattern in the largest economies (e.g., Brazil and Mexico in Latin America; China and India in Asia).



Source: FAO (2006).

Commodity-exporting LDCs specialize in a narrow range of primary agricultural commodities

Agricultural productivity in LDCs tends to be lower than in other developing countries, and productivity growth has been too slow to offset the negative effects of falling and volatile commodity prices. In some of their traditional exports, commodity-exporting LDCs are losing market share, and diversification into more dynamic sectors and upgrading into higher value added segments of agricultural commodity production are occurring very slowly.[11]



Source: Based on IMF (2007) data for commodity prices.

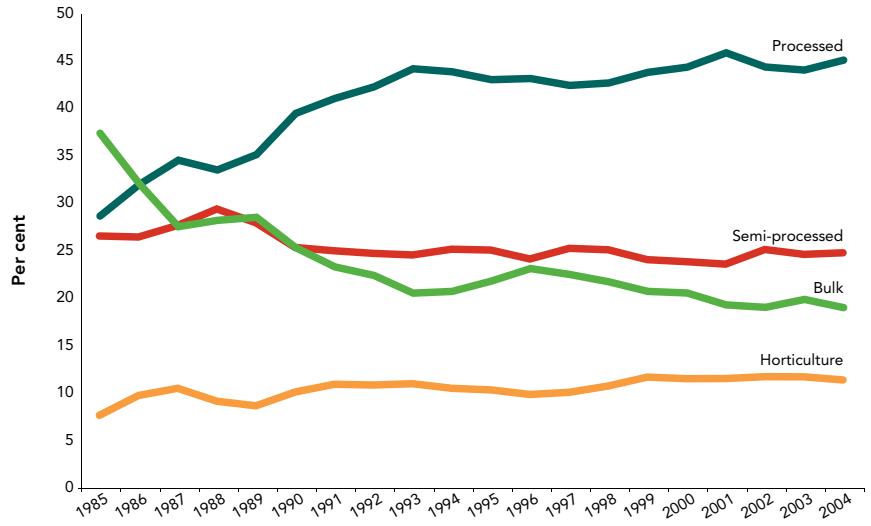
Note: Nominal values deflated using the United States Consumer Price Index from the World Development Indicators database. Sugar prices are free market prices.

Growing world food and biofuels demand as well as high oil prices have pushed up the prices of some agricultural commodities since 2000, but not enough to reverse the longer-term downward trend

Government subsidies and other policy support to biofuels have been expanding, putting price pressure on such inputs as maize, palm oil and sugar cane—the last sustained in addition by the 2006 reform of the EU sugar regime.

Other commodities of importance to low-income developing countries, such as cocoa, coffee and cotton, have also benefited from dynamic global demand. In the case of cotton, however, significant distortions in world market prices remain as a result of insufficient subsidy reforms in large exporting countries.[12]

Share of agricultural exports' value (excluding intra-EU trade) by stage of processing, 1985-2004



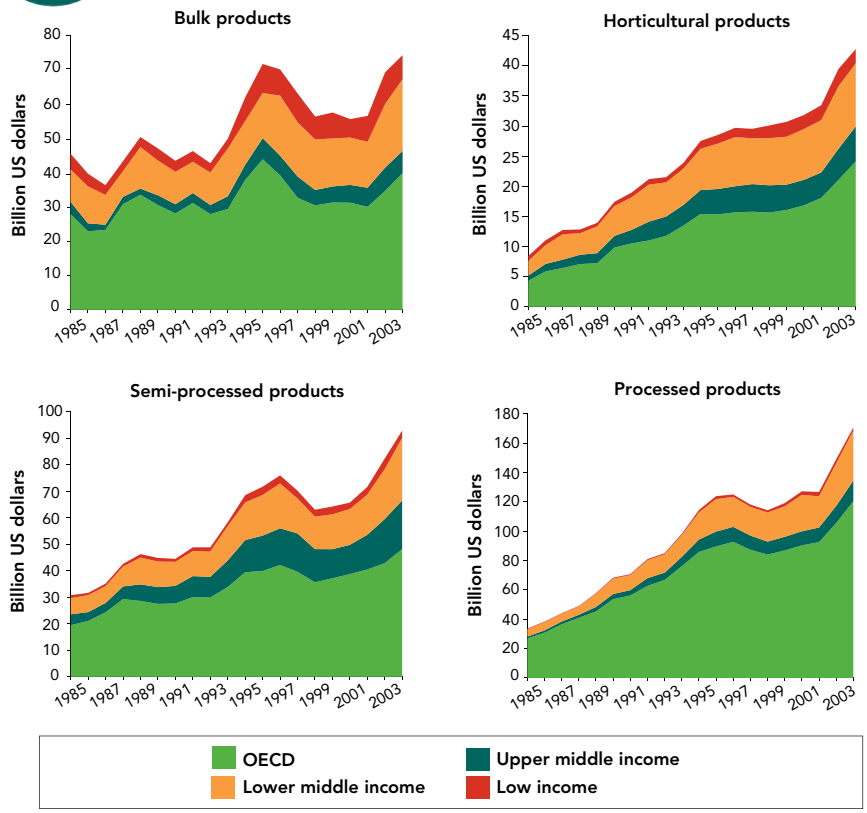
Source: OECD-FAO (2007).

Processed foods and horticultural products have been highly dynamic in global markets

In the food industry, numerous new products and brands are brought to market every year, as are products with higher quality and service content. Over the past two decades, such highly processed products have enjoyed an average annual growth of 9 per cent, comparable to the growth rate of total merchandise exports. As a result, this group of commodities has steadily increased its share of agriculture trade, to 45 per cent of total exports.

Although from a lower base, horticultural products have increased their market share by nearly half over the past twenty years, as a result of innovations in inputs, post-harvest treatments, packing, labelling, logistics, and the use of specialized skills (e.g., in the introduction and adaptation of new varieties to local conditions).[13]

Share of agricultural exports, by degree of processing and country income group, 1985-2004

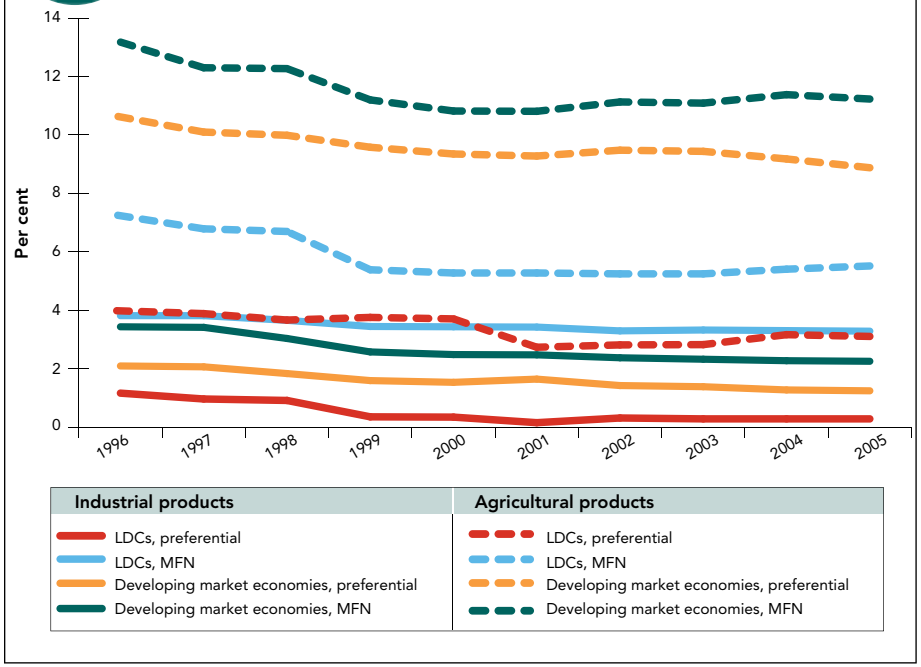


Source: OECD-FAO (2007).

Developed countries still dominate world agricultural trade, but middle-income countries have been gaining ground in dynamic product categories

OECD countries are still dominant players in world agricultural trade across categories, and particularly for processed products, the production of which relies on the availability of specialized skills. There are, however, some noticeable structural changes. Exports of processed products by middle-income countries grew at double-digit rates between 1985 and 2004. Those countries also saw rapid growth in their horticultural exports, though the OECD countries still dominate.[14]

Average tariffs imposed by developed countries on agricultural products from developing countries and LDCs, agricultural versus industrial products, applied MFN and preferential tariffs, 1996-2005



Source: UNCTAD, WTO and ITC (2006).

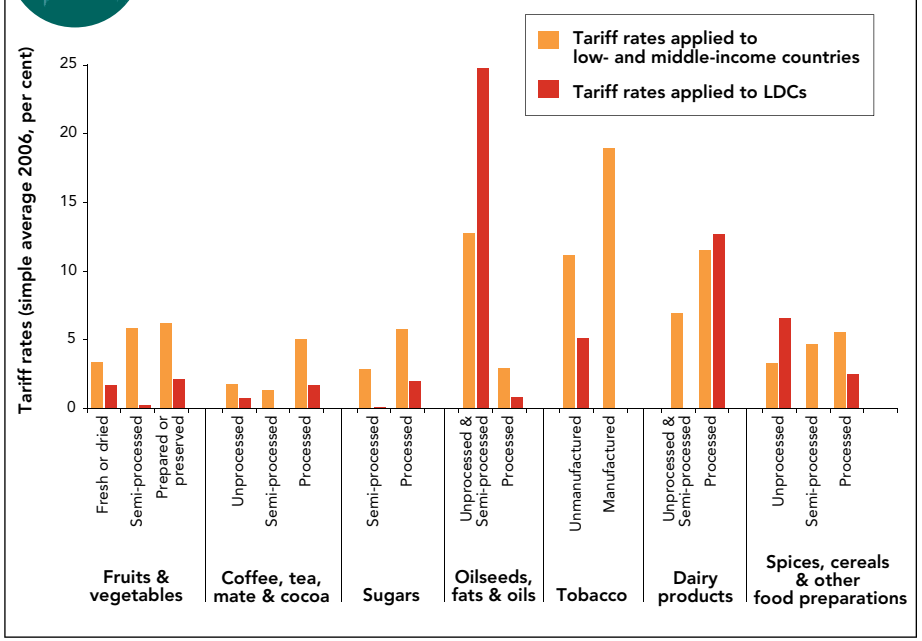
Note: A fixed trade structure has been used to compute the weighted average of tariffs. Agricultural products comprise plant and animal products, including tree crops but excluding timber and fish products.

Developing country agricultural exports still face significant tariff barriers and tariff escalation in developed country markets, although LDCs benefit from substantial preferences

Tariff escalation is only one factor limiting the capture of value added by developing countries. Another is the high market concentration on the buyers' side of agricultural commodity markets and the high fragmentation on the developing country producers' side. Supporting product differentiation through branding and other value-adding activities, on the one hand, and strengthening extension services for smaller producers, on the other, have been tried with success in some countries as a way to overcome these challenges (e.g., the recent trademarking of specialty coffee in Ethiopia).[15]

LDCs face less steep tariff escalation but also generally have less capacity to integrate into processing. Moreover, for those countries benefiting from preferential treatment under the EU's Everything But Arms (EBA) scheme and similar schemes, multilateral liberalization could result in losing market share in favour of more competitive producers, at least for some products.

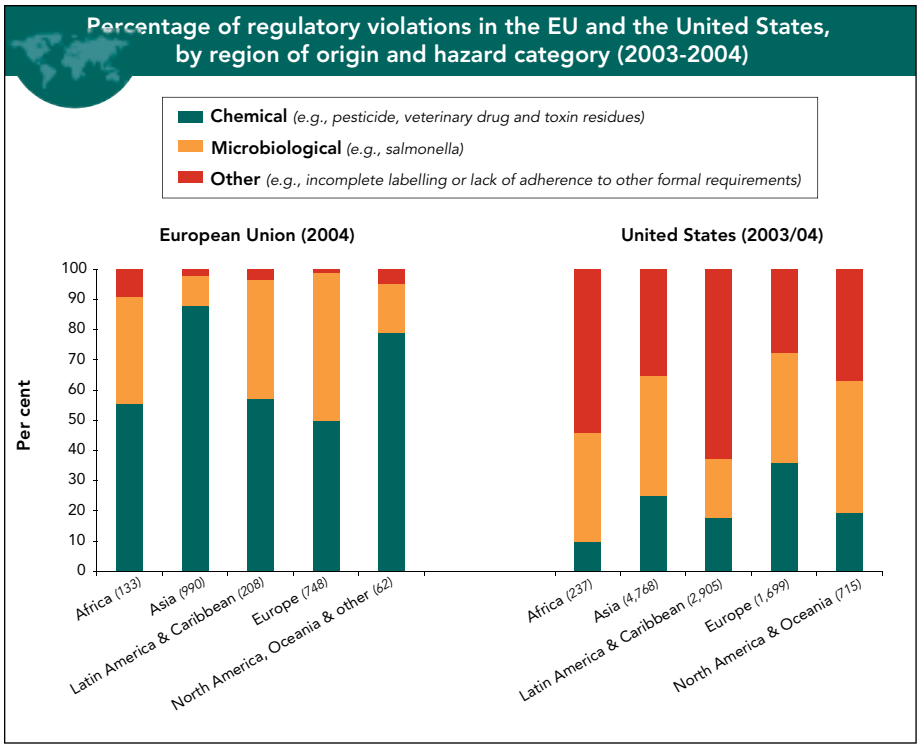
Tariff escalation in developed country markets, selected agricultural products



Source: Based on the WITS UNCTAD-TRAINS database.

Note: Averages include both ad valorem tariffs and ad valorem equivalents (AVEs) of non–ad valorem tariffs, computed jointly by UNCTAD and the World Bank.

> "The demand for high-value primary and processed products is rapidly increasing, driven by rising incomes, faster urbanization, liberalized trade, foreign investment, and advancing technology."



Source: Wiig and Kolstad (2005) with data from the European Union Rapid Alert System for Food and Feed (RAASF) and the United States Food and Drug Administration (FDA).

Note: Numbers in parentheses refer to the total number of violation notifications.

> "Enhanced capacity to comply with stricter standards can provide the basis for more sustainable and profitable agro-food exports in the long term."

Many developing countries have weak domestic capacities to meet increasingly demanding product standards

Sanitary and phytosanitary (SPS) measures affect fish and meat products, fruits and vegetables. Prepared foodstuffs and beverages are notably affected by marking, labelling and packaging requirements.[16]

While horticultural, fish and meat products have generally proved to be rewarding markets for developing country producers, stringent sanitary and traceability requirements are driving many smaller producers out of export markets.

The impact of SPS requirements on exports of agricultural and food products can be seen from data on actions taken by the food safety authorities of importing countries. There is considerable variation across both importing and exporting regions in the types of problems identified. Because of the wider scope of the United States FDA system—which (unlike the European Union system) includes notifications for products that are not a direct human health hazard—violations on account of, for example, incomplete labelling account for a larger share of the United States total. Besides different rules and practices in the European Union and the United States, differences in types of notification also reflect different import patterns and can inform the allocation of technical assistance to developing countries.[17]

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