THE STATE OF FOOD AND AGRICULTURE

FAO Agriculture Series No. 36
ISSN 0081-4539

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2005
## Contents

Foreword vii  
Acknowledgements x  
Glossary xi  
Explanatory note xiii

**PART I**  
Agricultural trade and poverty: can trade work for the poor?

1. Introduction and overview 3  
   - Trade, poverty and food security: what are the linkages? 6  
   - Overview of the report 7

2. Trends and patterns in international agricultural trade 12  
   - Agricultural trade and the world economy 12  
   - The shifting geography of agricultural trade 14  
   - Agricultural trade in the least developed countries 16  
   - Agricultural trade within regions 17  
   - Processed products and the role of supermarkets 20  
   - Key findings 25

3. The agricultural trade policy landscape 26  
   - Evolution of agricultural trade policy 26  
   - Domestic support 30  
   - Export competition 33  
   - Market access 38  
   - Key findings 47

4. Macroeconomic impacts of agricultural trade reform 48  
   - Modelling trade policy reform 48  
   - Computable general equilibrium model results 50  
   - Agriculture sector model results 57  
   - Key findings 58

5. Poverty impacts of agricultural trade reforms 60  
   - Agriculture's role in poverty reduction 60  
   - Trade's role in poverty reduction 63  
   - Agricultural trade reform and poverty 66  
   - Impact of trade reforms on factor markets 72  
   - Trade reforms, productivity and economic growth 74  
   - Implications for policy research 78  
   - Key findings 79

6. Trade and food security 80  
   - What is food security? 80  
   - Correlations between trade and hunger 82  
   - Trade liberalization and food security 84  
   - Case studies in macroeconomic and trade reforms 86  
   - Key findings 96

7. Making trade work for the poor: the twin track approach to hunger and poverty reduction 98  
   - Track one: creating opportunities 99  
   - Track two: ensuring access 102  
   - Are we on the right path? 103  
   - Summary 105
Part II
World and regional review: facts and figures

1. Trends in undernourishment 117
2. Food emergencies and food aid 119
3. External assistance to agriculture 121
4. Crop and livestock production 123
5. World cereal supply situation 126
6. International commodity price trends 127
7. Agricultural trade 130
8. Fisheries: production, utilization and trade 134
9. Forestry 137

Part III
Statistical annex

Notes on the annex tables 147
Table A1 Countries and territories used for statistical purposes in this publication 148
Table A2 Food security and nutrition 150
Table A3 Agricultural production and productivity 154
Table A4 Population and labour force indicators 159
Table A5 Land use 165
Table A6 Trade indicators 172
Table A7 Economic indicators 177
Table A8 Total factor productivity 182

References 187
Special chapters of *The State of Food and Agriculture* 193
Selected publications 195
17. Agricultural trade and undernourishment, 1998–2002 64
22. Regional impact of trade liberalization in Mexico 67
23. Initial impact of WTO accession on rural and urban household real income in China 69
24. Impact of MERCOSUR on household real income in Argentina 73
25. Impact of trade liberalization on household real income in Mexico 73
26. Conceptual framework for food insecurity 81
27. Percentage undernourished plotted against ratio of agricultural trade to agricultural GDP 82
28. Percentage underweight plotted against ratio of agricultural trade to agricultural GDP 83
29. Reform–response–result framework 84
30. Evolution of real domestic prices and the real effective exchange rate in Chile 90
31. Evolution of real domestic prices and the real effective exchange rate in Ghana 91
32. Change in average food availability vs change in undernutrition prevalence during the 1990s 94
33. Agricultural capital stock per agricultural worker in developing countries by prevalence of undernourishment in 2000–2002 104
34. Agricultural orientation of public investment 105
35. Long-term trend in external assistance to agriculture, 1974–2002 105
36. External assistance to agriculture per agricultural worker by prevalence of undernourishment, 1998–2000 106
37. Undernourished population by region, 2000–02 117
38. Trend in number of undernourished in developing countries, by region 118
39. Trend in percentage of undernourished in developing countries, by region 118
40. Recipients of food aid in cereals 119
41. Recipients of food aid in non-cereals 121
42. Commitments of external assistance to agriculture, by main recipient regions 122
43. External assistance to agriculture per agricultural worker 122
44. Changes in crop and livestock production 124
45. Long-term trend in per capita food production by region and country group 125
46. World cereal production and utilization 126
47. World cereal stocks and stocks-to-utilization ratio 127
48. Commodity price trends 128
49. Annual change in value of global agricultural exports 130
50. Global agricultural exports 131
51. Agricultural imports and exports, by region 131
52. World fish production, China and rest of the world 135
53. Trade in fish and fish products, developed and developing countries 136
54. Net exports of fish and fish products and selected agricultural commodities in developing countries 136
55. World roundwood production 137
56. Production, consumption, imports and exports of industrial roundwood in 2002 138
57. Roundwood production, developed and developing countries 138
58. Value of trade in forest products 139
59. Industrial roundwood production by region, 2002 140
Foreword

The State of Food and Agriculture 2005 examines the linkages among agriculture, trade and poverty and asks whether international agricultural trade, and its further reform, can help overcome extreme poverty and hunger.

The global statistics on poverty and hunger are all too familiar. An estimated 1.2 billion people live on less than one dollar a day and FAO’s most recent estimates indicate that 852 million people lack sufficient food for an active and healthy life. There is now also an increased awareness that extreme poverty and hunger are largely rural phenomena. Most of the world’s poor and hungry people live in rural areas and depend on agriculture for their livelihoods. To the extent that agriculture is affected by trade, trade will necessarily affect the livelihoods and food security of the world’s most vulnerable people.

The global economy is becoming increasingly integrated through trade, and agriculture is part of this larger trend. For some countries, agricultural trade expansion – sparked by agricultural and trade policy reforms – has contributed to a period of rapid pro-poor economic growth. Indeed, some of the countries that have been most successful in reducing hunger and extreme poverty have relied on trade in agricultural products, either exports or imports or both, as an essential element of their development strategy.

Many of the poorest countries however, have not had the same positive experience. Rather, they are becoming more marginalized and vulnerable, depending on imports for a rising share of their food needs without being able to expand and diversify their agricultural or non-agricultural exports. FAO believes that the reform process under way must consider the specific circumstances of these countries, particularly their stage of agricultural development and the complementary policies needed to ensure their successful integration into global agricultural markets.

FAO has long recognized that agricultural trade is vital for food security, poverty alleviation and economic growth. Food imports are a fundamental means of supplementing local production in ensuring the provision of minimum supplies of basic foodstuffs in many countries. Agricultural exports are an important source of foreign exchange earnings and rural income in many developing countries. Reducing trade-distorting agricultural subsidies and barriers to agricultural trade can serve as a catalyst for growth as producers worldwide could then compete on the basis of their comparative advantage.

However, international trade in agricultural products is characterized by a number of problems that do not allow competition on the basis of comparative advantage. The markets for many temperate-zone products and basic food commodities are substantially distorted by government subsidies and protection, particularly in Organisation for Economic Co-operation and Development (OECD) countries. Some developed countries continue to subsidize their farmers and, where this leads to market surpluses, even their agricultural exports. For other agricultural products, particularly tropical ones such as coffee, tea, natural fibres, tropical fruits and vegetables, the problems include high as well as complex and seasonal tariffs and significant tariff escalation.

These market distortions tend to lower world market prices for basic foodstuffs and limit market access. This has helped net food-importing low-income countries to keep their food import bills low, but has also sent wrong signals to the governments of developing countries that have sometimes misled them to neglect their own agriculture. Low prices and lack of investment have hindered agricultural and rural development in poor countries. In this context it must be emphasized that it is in the developed countries’ interests that developing countries grow faster, not least...
because such growth would increase the size of markets for developed country non-agricultural exports.

The developing countries too have important decisions to make. Some developing country exporters would benefit from the liberalization of OECD agricultural policies, but benefits for developing countries are also expected to result from liberalization of trade among them. Indeed, many benefits from global agricultural trade liberalization for developing countries would be the result of their own policy reforms. South–South agricultural trade is expanding rapidly as incomes rise, cities grow and lifestyles shift towards more diverse diets. These are the growth markets of the future.

It should be noted, however, that some developing countries may not gain from further agricultural trade liberalization. Some countries that depend on preferential access to protected OECD markets for their agricultural exports would lose if those preferences were eroded. Net food importing countries would also be harmed, especially in the short run, in so far as the removal of OECD subsidies would lead to higher prices of basic foodstuffs on world markets.

Although there seems to be broad consensus that trade liberalization fosters efficiency and economic growth, the immediate results for the poor and food-insecure seem to be mixed in the present situation of distorted agricultural commodity markets. Experience shows that gains and losses and the distribution of winners and losers among individuals and countries are determined by context. In practice, a great deal seems to depend on the existence of complementary factors. International trade and trade liberalization can best promote sustainable reductions in hunger and poverty if appropriate complementary measures are put in place.

These measures include, on the one hand, investments that would enable people to take advantage of the opportunities presented by trade and, on the other hand, social safety nets to ensure that the weakest and most vulnerable members of society are protected from the potential disruptions that arise from trade reform. We must always pay particular attention to the specific difficulties faced by the least-developed countries, the low-income food-deficit countries and other vulnerable groups.

Among the most important of these investments are measures such as reducing the large variations in agricultural production in rain-dependent areas through small-scale water projects implemented at the village and community levels; improving rural roads so that inputs can more easily reach the producers and production the markets; and improving all components of the marketing chain.

Especially needed are better storage and packaging facilities at the farm level and throughout the marketing process, as well as market facilities, slaughterhouses and ports. Equally important is investment in capacity building to enable countries to comply with quality and safety standards and with the World Trade Organization Agreements on Sanitary and Phytosanitary Measures and Technical Barriers to Trade; this includes the provision of skills training, equipment and resources, and strengthening of institutions to facilitate countries’ active participation in standard-setting bodies.

Such investment in agriculture and rural areas has multiple payoffs, not the least of which is the increased capacity of developing countries to become more effective participants in the international economy. With proper assistance from wealthier countries, trade standards can be transformed from a threat to an opportunity.

FAO’s ongoing studies and analyses do provide encouraging lessons and overall policy guidance. Among these many important lessons is the need for policymakers to consider more carefully than they have in the past how trade policies can be used positively to promote pro-poor growth. This involves actively implementing policies and making investments that complement trade reforms to enable the poor to take advantage of trade-related opportunities, while establishing safety nets to protect vulnerable members of society.
The Millennium Declaration underscores the importance of international trade in the context of development and the elimination of poverty. In the Millennium Declaration, governments committed themselves, *inter alia*, to the creation of an open, equitable, rule-based and non-discriminatory multilateral trading system. Such a system is essential if international agricultural trade is to promote more equitable economic growth and contribute to the goals of poverty alleviation and food security.

Jacques Diouf
FAO DIRECTOR-GENERAL
The State of Food and Agriculture is prepared by FAO's Agricultural and Development Economics Division. The team is led by Terri Raney, Senior Economist and Editor, and includes André Croppenstedt, Annelies Deuss, Jakob Skoet and Slobodanka Teodosijevic. Stella di Lorenzo and Paola di Santo provide secretarial and administrative support. Randy Stringer, Chief, Comparative Agricultural Development Service, and Prabhu Pingali, Director, Agricultural and Development Economics Division, provide overall supervision and guidance.

Part I, “Agricultural trade and poverty, can trade work for the poor?” was prepared under the direction of Joe Francois, Randy Stringer and Alexander Sarris. Numerous people from several FAO technical units, in particular the Commodities and Trade Division, as well as other international organizations and independent experts provided helpful advice, assistance and guidance. The key background research for Part I is based on work by Joe Francois, Tom Hertel, Phillip Killicoat, Maros Ivanic, Will Martin, Randy Stringer, Jacob Skoet, Frank van Tongeren and Wang Zhi. The report benefited greatly from critical comments, analytical reviews and substantive editing by Kym Anderson, Jelle Bruinsma, Walter Falcon, Hartwig de Haen, Tim Josling, Jamie Morrison, Prabhu Pingali, Ramesh Sharma and Alberto Valdés. Colleagues in FAO’s Statistics Division provided data and related statistical inputs.

Chapter 1 (Introduction and overview). Draft text was provided by Joe Francois, Tim Josling, Terri Raney and Randy Stringer.

Chapter 2 (Trends and patterns in international agricultural trade). Text was prepared by Annelies Deuss, Jacob Skoet and Randy Stringer.

Chapter 3 (The agricultural trade policy landscape). Contributors include Joe Francois, Tim Josling, Will Martin, Jakob Skoet, Frank van Tongeren and Wang Zhi.

Chapter 4 (Macroeconomic impacts of agricultural trade reform). This chapter is based on a background paper prepared by Joe Francois and Frank van Tongeren. Tom Hertel, Terri Raney and Jakob Skoet provided additional contributions.

Chapter 5 (Poverty impacts of agricultural trade reforms). This chapter is based on a background paper prepared by Tom Hertel and Maros Ivanic. Additional inputs were provided by Randy Stringer and Alberto Valdés.

Chapter 6 (Trade and food security). Phillip Killicoat, Annelies Deuss, Terri Raney and Jakob Skoet prepared this chapter, which is based in large part on research by the FAO Commodities and Trade Division. This research was presented to the FAO Committee on Commodity Problems in May 2005 in the document Food security in the context of the context of economic and trade policy reforms: Insights from country experiences (CCP 05/11).

Chapter 7 (Making trade work for the poor: the twin track approach to hunger and poverty reduction). This concluding chapter was prepared by Annelies Deuss, Phillip Killicoat, Prabhu Pingali, Terri Raney, Randy Stringer and Jakob Skoet.

Part II, “World and regional review: facts and figures”, was prepared by André Croppenstedt, Annelies Deuss and Jakob Skoet.

Part III, “Statistical annex”, was prepared by André Croppenstedt, Annelies Deuss and Terri Raney.

The team is particularly grateful to the State of Food and Agriculture External Advisory Board, comprising Walter Falcon (Chair), Bina Agarwal, Kym Anderson, Simeon Ehui, Franz Heidhues and Eugenia Muchnik, who provided valuable guidance on the scope and focus of the report. The report benefited from the work of the editors, designers and layout artists of the FAO Publishing Management Service.
Glossary

AMS aggregate measurement of support
AoA (Uruguay Round) Agreement on Agriculture
CAP Common Agricultural Policy
CGE computable general equilibrium
CSO civil society organization
CV coefficient of variation
EAA external assistance to agriculture
EPA United States Environmental Protection Agency
EU European Union
EV equivalent variation
FDI foreign direct investment
GATT General Agreement on Tariffs and Trade
GDP gross domestic product
GTAP Global Trade Analysis Project
IMF International Monetary Fund
IPC International NGO/CSO Planning Committee for Food Sovereignty
LDC least developed country
MDG Millennium Development Goal
MFN most-favoured nation
NAFTA North American Free Trade Agreement
NFIDC net food-importing developing country
NGO non-governmental organization
NTB non-tariff barrier
OECD Organisation for Economic Co-operation and Development
PPP purchasing power parity
PRSP  Poverty Reduction Strategy Paper
PSE   producer support estimate
ROA  Roles of Agriculture Research Project (FAO)
SSG  special safeguard (mechanism)
STE  state trading enterprise
TRQ  tariff rate quota
UNCTAD United Nations Conference on Trade and Development
UNDP United Nations Development Programme
USDA United States Department of Agriculture
WTO World Trade Organization
Explanatory note

The statistical information in this issue of *The State of Food and Agriculture* has been prepared from information available to FAO up to November 2005.

**Symbols**
The following symbols are used:
– = none or negligible (in tables)
... = not available (in tables)
$ = US dollars

**Dates and units**
The following forms are used to denote years or groups of years:

- 2003/04 = a crop, marketing or fiscal year running from one calendar year to the next
- 2003–04 = the average for the two calendar years

Unless otherwise indicated, the metric system is used in this publication.
“Billion” = 1 000 million.

**Statistics**
Figures in statistical tables may not add up because of rounding. Annual changes and rates of change have been calculated from unrounded figures.

**Production indices**
The FAO indices of agricultural production show the relative level of the aggregate volume of agricultural production for each year in comparison with the base period 1989–91. They are based on the sum of price-weighted quantities of different agricultural commodities after the quantities used as seed and feed (similarly weighted) have been deducted. The resulting aggregate therefore represents disposable production for any use except seed and feed.

All the indices, whether at the country, regional or world level, are calculated by the Laspeyres formula. Production quantities of each commodity are weighted by 1989–91 average international commodity prices and summed for each year. To obtain the index, the aggregate for a given year is divided by the average aggregate for the base period 1989–91.

**Trade indices**
The indices of trade in agricultural products are also based on the base period 1989–91. They include all the commodities and countries shown in the *FAO Trade Yearbook*. Indices of total food products include those edible products generally classified as “food”.

All indices represent changes in current values of exports (free on board [f.o.b.]), and imports (cost, insurance, freight [c.i.f.]), expressed in US dollars. When countries report imports valued at f.o.b., these are adjusted to approximate c.i.f. values.

Volumes and unit value indices represent the changes in the price-weighted sum of quantities and of the quantity-weighted unit values of products traded between countries. The weights are, respectively, the price and quantity averages of 1989–91 which is the base reference period used for all the index number series currently computed by FAO. The Laspeyres formula is used to construct the index numbers.