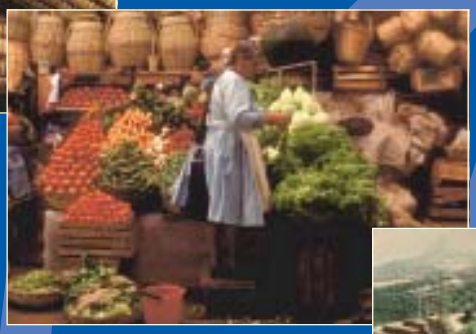

World agriculture: towards 2015/2030

Summary report

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FAO

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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Foreword

This report summarizes the main findings of the FAO study, *World agriculture: towards 2015/30,* which updates and extends the FAO global study, *World agriculture: toward 2010*, issued in 1995. It assesses the prospects, worldwide, for food and agriculture, including fisheries and forestry, over the years to 2015 and 2030. It presents the global long-term prospects for trade and sustainable development and discusses the issues at stake in these areas over the next 30 years.

In assessing the prospects for progress towards improved food security and sustainability, it was necessary to analyse many contributory factors. These range from issues pertaining to the overall economic and international trading conditions, and those affecting rural poverty, to issues concerning the status and future of agricultural resources and technology. Of the many issues re-viewed, the report concludes that the development of local food production in the low-income countries with high dependence on agriculture for employment and income is the one factor that dominates all others in determining progress or failure in improving their food security.

The findings of the study aim to describe the future as it is likely to be, not as it ought to be. As such they should not be construed to represent goals of an FAO strategy. But the findings can make a vital contribution to an increased awareness of what needs to be done to cope with the problems likely to persist and to deal with new ones as they emerge. It can help to guide corrective policies at both national and international levels, and to set priorities for the years ahead.

The world as a whole has been making progress towards improved food security and nutrition. This is clear from the substantial increases in per capita food supplies achieved globally and for a large proportion of the population of the developing world. But, as the 1995 study had warned, progress was slow and uneven. Indeed, many countries and population groups failed to make significant progress and some of them even suffered setbacks in their already fragile food security and nutrition situation. As noted in the latest (2001) issue of *The State of Food Insecurity in the World*, humanity is still faced with the stark reality of chronic undernourishment affecting over 800 million people: 17 percent of the population of the developing countries, as many as 34 percent in sub-Saharan Africa and still more in some individual countries.

The present study predicts that this uneven path of progress is, unfortunately, likely to extend well into this century. It indicates that in spite of some significant enhancements in food security and nutrition by the year 2015, mainly resulting from increased domestic production but also from additional growth in food imports, the World Food Summit target of halving the number of undernourished persons by no later than 2015 is far from being reached, and may not be accomplished even by 2030.

By the year 2015 per capita food supplies will have increased and the incidence of undernourishment will have been further reduced in most developing regions. However, parts of South Asia may still be in a difficult position and much of sub-Saharan Africa will probably not be significantly

better and may possibly be even worse off than at present in the absence of concerted action by all concerned. Therefore, the world must brace itself for continuing interventions to cope with the consequences of local food crises and for action to remove permanently their root causes. Nothing short of a significant upgrading of the overall development performance of the lagging countries, with emphasis on hunger and poverty reduction, will free the world of the most pressing food insecurity problems. Making progress towards this goal depends on many factors, not least among which the political will and additional resource mobilization required. Past experience underlines the crucial role of agriculture in the process of overall national development, particularly where a large part of the population depends on the sector for employment and income.

The study also foresees that agricultural trade will play a larger role in securing the food needs of developing countries as well as being a source of foreign exchange. Net cereal imports by developing countries will almost triple over the next 30 years while their net meat imports might even increase by a factor of almost five. For other products such as sugar, coffee, fruits and vegetables the study foresees further export potential. How much of this export potential will materialize depends on many factors, not least on how much progress will be made during the ongoing round of multilateral trade negotiations. Developing countries' farmers could gain a lot from lower trade barriers in all areas, not only in agriculture. In many resource-rich but otherwise poor countries, a more export-oriented agriculture could provide an effective means to fight rural poverty and thus become a catalyst for overall growth. But the study also points at potentially large hardships for resource-poor countries which may face higher prices for large import volumes without much capacity to step-up production.

Numerous studies that assessed the impacts of freer trade conclude that lower trade barriers alone may not be sufficient for developing countries to benefit. In many developing countries, agriculture has suffered not only from trade barriers and subsidies abroad but has also been neglected by domestic policies. Developing countries' producers may therefore not benefit greatly from freer trade unless they can operate in an economic environment that enables them to respond to the incentives of higher and more stable international prices. A number of companion policies implemented alongside the measures to lower trade barriers can help. These include a removal of the domestic bias against agriculture; investment to lift product quality to the standards demanded abroad; and efforts to improve productivity and competitiveness in all markets. Investments in transportation and communications facilities, upgraded production infrastructure, improved marketing, storage and processing facilities as well as better food quality and safety schemes could be particularly important, the latter not only for the benefit of better access to export markets, but also for reducing food-borne diseases affecting the local population.

On the issue of sustainability, the study brings together the most recent evaluation of data on the developing countries' agricultural resources, how they are used now and what may be available for meeting future needs. It does the same for the forestry and the fisheries sectors. The study provides an assessment of the possible extent and intensity of use of resources over

the years to 2030 and concludes that pressure on resources, including those that are associated with degradation, will continue to build up albeit at a slower rate than in the past.

The main pressures threatening sustainability are likely to be those emanating from rural poverty, as more and more people attempt to extract a living out of dwindling resources. When these processes occur in an environment of fragile and limited resources and when the circumstances for introducing sustainable technologies and practices are not propitious, the risk grows that a vicious circle of poverty and resource degradation will set in. The poverty-related component of environmental degradation is unlikely to be eased before poverty reduction has advanced to the level where people and countries become significantly less dependent on the exploitation of agricultural resources. There is considerable scope for improvements in this direction and the study explores a range of technological and other policy options. Provided such improvements in sustainability are put in place, the prospects point to an easing of pressures on world agricultural resources in the longer term with minimal further buildup of pressures on the environment caused by agricultural practices.

I conclude by reiterating the importance of developing sustainable local food production and of rural development in the low-income countries. Most of them depend highly on agriculture for employment and income as an important and, often, the critical component of any strategy to improve their levels of food security and alleviate poverty. It is for this reason that sustainable agricultural and rural development is given enhanced priority in *The Strategic Framework for FAO: 2000–2015*.

Jacques Diouf
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About this report

This report is a shorter account of the results of the FAO study, *Agriculture: towards 2015/30*. It presents the latest FAO assessment of long-term developments in world food, nutrition and agriculture, including the forestry and fisheries sectors. It is the product of an interdisciplinary exercise, involving most of FAO's technical units and disciplines, and continues the tradition of FAO's periodical perspective studies for global agriculture, the latest of which was published in 1995 (Alexandratos, 1995). Earlier editions were Alexandratos (1988), FAO (1981) and FAO (1970).

The projections were carried out in considerable detail, covering about 140 countries and 32 crop and livestock commodities (see Annex 1). For nearly all the developing countries, the main factors contributing to the growth of agricultural production were identified and analysed separately. Sources of productivity growth, such as higher crop yields and livestock carcass weights, were distinguished from other growth resources, such as the area of cultivated land and the sizes of livestock herds. Special attention was given to land, which was broken down into five classes for rainfed agriculture and a sixth for irrigated agriculture. This level of detail proved both necessary and advantageous in identifying the main issues likely to emerge for world agriculture over the next 30 years. Specifically, it helped to spot local production and resource constraints, to gauge country-specific requirements for food imports and to assess progress and failure in the fight against hunger and undernourishment. The high degree of detail was also necessary for integrating the expertise of FAO specialists from various disciplines, as the analysis drew heavily on the judgement of in-house experts. Owing to space and other constraints, the results are, however, mainly presented at the aggregate regional and sectoral levels, which can mask diverging developments between individual countries and commodities. Likewise, space considerations militated against the inclusion of references to the numerous sources drawn upon in this report. References have therefore been limited to statistical sources and the sources of figures, tables and maps. These are given on p. 96. A complete list of references is provided in the main technical report.

Another important feature of this report is that its approach is "positive" rather than "normative". This means that its assumptions and projections reflect the most likely future but not necessarily the most desirable one. For example, the report finds that the goal of the 1996 World Food Summit — to halve the number of chronically undernourished people by no later than 2015 — is unlikely to be accomplished, even though this would be highly desirable. Similarly, the report finds that agriculture will probably continue to expand into wetlands and rainforests, even though this is undoubtedly undesirable. In general, the projections presented are therefore not goals of an FAO strategy but rather a basis for action, to cope both with existing problems that are likely to persist and with new ones that may emerge. It should also be stressed that these projections are certainly not trend extrapolations. Instead, they incorporate a multitude of assumptions about the future and often represent significant deviations from past trends.

A long-term assessment of world food, nutrition and agriculture could deal with a great number of issues, the relevance of which depends on the reader's interest in a particular country, region or topic. As a global study, however, this report had to be selective in the issues it addresses. The main focus is on how the world will feed itself in the future and what the need to produce more food means for its natural resource base. The base year for the study is the three-year average for 1997-99 and projections are made for the years 2015 and 2030. The choice of 2015 allows assessment of whether or not the goal of the 1996 World Food Summit — to halve the number of chronically undernourished people — is likely to be reached. Extending the horizon to 2030 creates a sufficiently long period for the analysis of issues pertaining to the world's resource base — in other words, the world's ability to cope with further degradation of agricultural land, desertification, deforestation, global warming and water scarcity, as well as increasing demographic pressure. Naturally, the degree of uncertainty increases as the time horizon is extended, so the results envisaged for 2030 should be interpreted more cautiously than those for 2015.

The analysis is, *inter alia*, based on the long-term developments expected by other organizations. The population projections, for instance, reflect the latest assessment (2000 Assessment, Medium Variant) available from the United Nations (UN, 2001), while those for incomes are largely based on the latest projections of gross domestic product (GDP) from the World Bank. Most of the agricultural data are from FAO's database (FAOSTAT), as in July 2001. Because these assumptions critically shape the projected outcomes, it is important to note that they can change significantly, even over the short term. For example, the historical data and the projections for the growth of population and GDP used in the 1995 study have since been revised in many countries, often to a significant extent. World population in the 1995 study, for instance, was projected at 7.2 billion for 2010, whereas the current UN projections peg the figure at 6.8 billion. Similarly, it is now assumed that sub-Saharan Africa's population will reach 780 million by 2010, compared with 915 million in the 1995 study. The GDP projections for sub-Saharan Africa also differ from those assumed in the 1995 study: per capita income growth over the period 1997-99 to 2015 is now projected at 1.8 percent a year, compared with 0.7 percent in the 1995 study (over the period 1988-90 to 2010). Finally, FAO's historical data for food production, demand and per capita consumption were often drastically revised for the entire time series as more up-to-date information became available.

This report begins by presenting the expected developments in world agricultural demand, production and trade (both in total and by major commodity group), and the implications for food security and undernourishment. It continues with a discussion of the main issues raised by these developments. These include the role of agriculture in rural development, poverty alleviation and overall economic growth, and the effects of globalization and freer trade. The report then discusses production and policy issues in the crop, livestock, forestry and fisheries sectors, including natural resource use and agricultural technology issues. It concludes with an assessment of the environmental implications of agricultural production, including its interactions with climate change.