

## WORLD FOOD TRENDS AND FUTURE FOOD SECURITY MEETING TOMORROW'S FOOD NEEDS WITHOUT EXPLOITING THE ENVIRONMENT

Per Pinstrup-Andersen

Malthus never fully anticipated the miracles of technological innovation, which, despite population doubling and redoubling, have so far kept at bay the threat of food supplies falling below the level where life can be sustained. Instead, the 1980s saw a near balance in growth of population and per capita food production in many regions: in fact, for the world as a whole, per capita food production increased by 5 percent. Yields of major cereals have more than doubled in the past few decades.

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As a consequence, marveling at the miracle of the "green revolution" has given way to a complacent assurance that technological innovation will always be able to conjure up adequate supplies to feed a growing population. Many countries and institutions have even begun to cut back their investment in the very agricultural research that has made it possible to feed the world in the past.

In *World Food Trends and Future Food Security*, an IFPRI Food Policy Report, Director General Per Pinstrup-Andersen looks at recent world food trends and asks if the positive production trends of the past 30 years are

likely to continue. Or, as 100 million new people are added to the world's population each year, will Malthus' prediction of increasing food scarcity come true? Will food scarcity, hunger, and disease related to malnutrition become even more widespread in the next 20-30 years?

Overall positive trends disguise wide disparities in production and distribution of food among regions. Today more than 700 million people in developing countries do not have access to sufficient food to lead healthy, productive lives. More than 180 million children are underweight. As many as 500,000 preschool children go blind each year as a result of vitamin A deficiency. Lack of micronutrients such as vitamin A and iron not only causes suffering and death but also cuts deeply into productivity. Through research and policy, diets could be changed to eliminate much of this suffering.

Although enough food is now being produced to feed everyone if it were evenly distributed, access to adequate food is largely governed by income. Of the 1.1 billion poor people in developing countries in 1990, 50 percent were in South Asia, 19 percent in Sub-Saharan Africa, 15 percent in East Asia, and 10 percent in Latin America. In South Asia and Africa, 50 percent of the regions' populations live in poverty. While significant reductions are expected in both South and East Asia, the poor in Africa are expected to increase by 40 percent by the year 2000.

### YIELD GAINS ARE KEY

Although food production increases of 30 percent in the 1980s seem impressive, they are less so in the light of population growth. On a per capita basis, 75 developing countries produced less food per person at the end of the 1980s than at the beginning. Except in Africa, 80 percent of the production gains came from increased yields in major cereal crops. The area cultivated has actually begun to decline in some regions. From now on, however, even Africa, which has always relied on cultivation of new land for production increases, will have to count on yield gains or pay high financial and ecological costs for expansion into areas not yet cultivated.

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Yield trends have climbed steadily upward in all major cereals since the 1960s, but some experts detect a tapering off. In China, for example, rice yield growth rates have slowed from more than 4 percent a year in the late 1970s to about 1.6 percent a year during the 1980s. Stagnation between 1980 and 1993 in per capita grain production in developing countries is causing concern because factors in

addition to population growth are pushing up demand. Expected growth in world feedgrain demand is more than twice the expected population growth.

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For more than 50 years food supplies have been sufficient to assure that international food prices increased less than other prices. Recent projections indicate that real food prices are unlikely to increase significantly during the remainder of the 1990s. Low food prices in the world market do not necessarily mean that more people will be fed, however. Poor people cannot express their demand for food because they cannot afford to buy it. More than 1 billion people live in households that earn less than a dollar a day per person. Clearly, they are not in a position to convert their food needs to effective market demand. Since price is a product of both food supplies and economic demand, low prices indicate the persistence of poverty and a lack of sufficient purchasing power as well as increasing food production.

If a sustainable balance between world food production and food *needs* (as opposed to food demand) is to be achieved in the coming years, four conditions must be met: (1) Economic growth must resume in the developing world, especially in Sub-Saharan Africa; (2) effective policies to reduce popula-

tion growth and to slow rural-to-urban migration must be adopted; (3) resources must be committed to development of rural infrastructure, to continuation of international and national agricultural research, and to provision of credit and technical assistance to give farmers access to modern inputs; and (4) measures must be developed to manage natural resources and to prevent environmental degradation.

## **NO TIME FOR COMPLACENCY**

At this point, international real food prices are low, food surpluses exist in developed countries, and there is reason to believe that former Soviet Union countries will increase their food production in the decade to come. Yields of wheat, rice, and maize are still increasing in Asia and parts of Latin America although at a lower rate than before. All of these positive signs have caused developed countries to reduce their support for developing-country agriculture, including investment in research and technology.

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Although the overall picture is bright, about 700 million people are

food insecure today, and tomorrow does not look so promising. Population in Sub-Saharan Africa is expected to grow at 3 percent a year and food production at less than 2 percent. If current trends in population growth and food production continue, by the year 2020, the World Bank estimates that Africa alone will have a food shortage of 250 million tons. And poverty and the numbers of underfed children will grow accordingly. Though less severe, shortages are also likely in South Asia. At the same time, large areas of land are being degraded and deforested, largely due to poverty, population growth, and limited access to appropriate technology.

Now is not the time for complacency. Malthus' predictions have failed to materialize so far because science has been used to expand food production. Failure to invest in agricultural research today will show up in production shortfalls 10-20 years from now. If environmental degradation continues unchecked, shortfalls could occur much sooner. But even if food supplies continue to be adequate to meet global demand at low prices, complacency is not in order. Unless more food is produced by the poor in the developing countries where large increases in population and poverty are expected, food insecurity and its toll in human misery will continue to increase. To avoid future food crises, adequate investments in the components of agricultural development such as rural infrastructure, research, and technology must be made today.

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Please send me the Food Policy Report, *World Food Trends and Future Food Security*, by Per Pinstrup-Andersen.

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