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Thomas L. Dobbs

South Dakota State University, thomas.dobbs@sdstate.edu

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Editor: Donald C. Taylor

Economics Department SDSU, Box 504A Brookings, SD 57007-1007 Tele: (605) 688-4141

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Agriculture's Capacity to Feed a Hungry World

by

Thomas L. Dobbs
Professor and Extension
Economist

World Food Day, this October 16th, marks almost 10 years since the United Nations General Assembly convened the World Food Conference in Rome in November 1974. That conference, the subject then of cover stories in both Time and Newsweek, was held because of the scale and urgency of food shortfalls experienced in 1973. Attention was focused on the extent and nature of world food problems and on measures needed to solve the problems.

The intervening decade has been turbulent for the world's agricultural system. There has been substantial growth in production and trade, yet major world hunger problems remain. It is timely to again take stock of agriculture's capacity to feed a hungry world. This issue of the Economics Newsletter briefly summarizes a recent attempt to do just that by Resources for the Future, a highly respected independent research institution in Washington, D.C. (see their *Resources*, No. 76, Spring 1984).

Growth in world food demand

World agricultural output, excluding China's, nearly doubled between the early 1950's and 1980. Both developed and developing countries shared in this agricultural growth, which averaged 3.1% per year in the 1950's, 2.6% in the 1960's, and 2.2% in the 1970's. However, because of population growth--a worldwide increase from 2.8 billion persons in 1955 to 4.4 billion in 1980--and lagging production in some regions, **per capita** incomes and

food supplies have increased very little for millions of people. Per capita food supplies are considered inadequate in 53 developing countries. Twelve countries where the malnourished are considered to be present in particularly large numbers are India, Indonesia, Bangladesh, Nigeria, Brazil, Ethiopia, Pakistan, Philippines, Afghanistan, Burma, Columbia, and Thailand.

Population growth will continue to put pressure on world food supplies in the decades ahead. Although rates of population growth are beginning to slow, huge numbers of young people entering their child-bearing years in the developing countries will keep overall growth in population numbers quite high for years to come. The world's population is expected to increase from 4.4 billion persons in 1980 to 6.2 billion in the year 2000 and to nearly 8.0 billion by the year 2020. Much of this increase will take place in Asia and Africa.

Population growth and economic growth combine to boost effective demand for agricultural commodities. While world economic growth may remain comparatively slow during the 1980's, the pace could again pick up in the 1990's. The Resources for the Future (RFF) study projects global demand for agricultural products to increase substantially by the year 2000 as a result of these combined population and economic forces. Expectations are for a 60% increase by 2000 (compared to 1979-81) for such income-sensitive commodities as meat and oilseeds, a 50% increase for cereal grains, and a 35-40% increase for milk and natural fibers.

Agricultural production capacity

RFF's study concludes that the world possesses the **potential** to feed its population in the year 2000 moderately better than it does at present. However, to do so will require major investments in agricultural infra-

structure (such as irrigation), research, and education. It will also require a proper mix of economic policies for agriculture. Annual production increases of 1.8% and 2.1% will be required for cereal grains and oilseeds, respectively. Even then, large numbers of people in developing countries whose incomes remain extremely low will continue to be undernourished. Thus, policies of agricultural and economic growth which provide employment and purchasing power for the masses will remain critical for the developing world well into the 21st century.

Implications for U.S. agriculture

All regions of the world are expected by RFF to meet increased demand largely out of domestic production. Foreign exchange limitations will necessitate this, in part. At the same time, unexploited agricultural potential in many underdeveloped countries makes relatively high growth rates possible in them.

Nevertheless, even with RFF's projected modest increases in per capita food consumption, world trade will have an important role to play. World trade in cereals, for example, is expected to almost double between 1978-80 and the year 2000. RFF's projections suggest

continued expansion of U.S. agricultural exports into the 21st century. Net U.S. exports of cereals and oilseeds are expected to increase by 53% and 62%, respectively, between 1979-81 and 2000. Growth in export demand, coupled with modest growth in domestic demand, will require annual rates of growth in U.S. output equaling 1.3% for cereals and 1.6% for oilseeds. These rates of growth are substantially less than we experienced in the export-boom 1970's.

Authors of the RFF study believe that the U.S. "can readily sustain increases in output to meet projected global demand for its products to 2000 at real prices in the neighborhood of those of 1979-81." However, they go on to state that "To expand productive capacity to permit a near-doubling of output to meet projected demand in 2020 without major increases in real prices will require major public and private investments in science and education to yield new and improved technologies and management systems to maintain or enhance resource productivity. Continued growth in total factor productivity is needed to maintain a competitiveness in world markets and stave off growing pressures on the natural resource base, increasingly serious environmental problems and, ultimately, higher real costs for food and fiber."

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