World Food Strategy for the 1980s - Context, Objective, and Approach*

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Adequate food for all people is the material foundation for all humanistic endeavour. Unfortunately, the current world food situation is characterized by grossly inadequate total supply, large year-to-year fluctuations in the availability of supply, intranational and international disparities in per capita demand for food, and even greater disparity in command of the capital technology, trained personnel, and institutions necessary for rapid production, growth and broad distribution of food.

Improved food production and distribution can be accomplished only through broad economic development, which is now complicated by problems of increasing land scarcity and rising energy prices. Solving either one of these problems tends to exacerbate the other. In addition, strong inflationary pressures and related instability of foreign exchange rates have caused industrialized countries to reduce their growth rates and their imports of manufactured and processed goods from developing countries. As a result, developing countries have difficulty in financing food, fertilizer, and other necessities.

Through their rapidly increasing economic and political power, Third World countries are increasing their capacity to influence directly the international political and economic environment within which they develop while concurrently reducing the capacity of developed countries to influence those processes. Development of effective food policy is further complicated by increasing diversity among Third World countries.

It is naive to expect simple or even new solutions to the present complex world food problem. However, it is apparent that three conditions will be central to the mitigation of the food

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problem during the next few decades. First, massive investment will be required. This will include the transfer of resources to poor countries with significant potential for increasing food production. Second, it will be necessary to build research systems to increase land productivity now and to eventually increase energy supplies and efficiency. Third, there will have to be broad participation in growth so that nonfarm employment of low-income people can provide the purchasing power to expanded food supplies. These latter policies will, of course, add further to the need for investment, international transfer of resources, and trade.

Without these conditions, there will be increasing privation and international tension, which could lead to severe economic dislocation and even armed conflict. There is a great danger that governments will be misled into thinking that there are cheaper, quicker substitutes for the only effective actions we now know or that action on the pressing food problems of the coming decade can be suspended while more satisfactory solutions to the long-term problem are sought.

The Magnitude of the World Food Problem

The International Food Policy Research Institute calculates that if past food production and consumption trends continue, the developing market economy countries will face a deficit in staple food crops of 145 million tons by 1990.[1] Even these quantities would not permit adequate food to meet the the FAO minimum calorie recommendation. If the consumption estimate is expanded to allow 10 per cent more than the FAO minimum calorie recommendations (to compensate for unequal distribution of food), then the food gap will increase to 185 million tons by 1990. This is five times the shortfall in the relatively good crop year of 1975.

Approximately, two-thirds of the projected deficit would fall in the low-income countries (those with a per capita income of less than ($300 in 1973 dollars). To close the food gap of the low income countries through domestic production would require accelerating their food production growth rate from the 2.4 per cent achieved in the 1960-75 period to 4.4 per cent. That is a rate rarely achieved, let alone sustained by countries with far more resources than the low - income countries.

The middle-income countries (those with a per capita income of ($300 or more in 1973 dollars), which already average a 3.5 percent growth rate, would have to increase their food production growth rate only by 0.4 per cent to close their gap. Not only is it feasible for these countries to meet this target, but they also have the added potential of earning foreign exchange through exports in order to finance imports of food.

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1. Developing market economies are essentially Third World countries, excluding centrally planned countries such as the People's Republic of China and Cuba. The calculations assume production trends for 1960-1975 ; the U. N. median variant population projection ; per capita income growth at the pace of 1960 - 1975, but none growing less than 1.5 per cent. *Food Needs of Developing Countries: Projections of Production and Consumption to 1990,* Research Report No.3 (Washington, D. C. : IFPRI, December 1977).

However it is important to note that the countries that have been most successful in achieving accelerated food production growth rates tend to fall in the growing group of middle-income countries, and that they have increased their food imports because demand, fueled by population growth and rising incomes has accelerated more rapidly than production.[2] Thus, their success further limits supplies available to low-income countries.

It is low-income countries, containing nearly two-thirds of the population of the developing world, that pose the most difficult problem. They have the greatest human need, the least capacity for growth and the least capacity to command the limited export supplies of the surplus countries.

Thus, there must be either Herculean efforts in production or reduced demand. The latter will occur through rising relative prices of food, which will be felt most by the poor who spend the bulk of their income on food, or through reduced employment of the poor.[3] The reduction in consumption will occur largely on the part of the lower-income people. Hence, we can expect the international and the interpersonal distribution of income to worsen significantly during the next decade. The result will not be the onset of a dramatic, widespread famine and its consequence, but the continuous increase in the number of people who must endure the indignity of poverty, without adequate food for an active and healthy life.

Requisites to Closing the Feed Gap

The International Food Policy Research Institute has economic and resource requirements necessary to close the food gap of the low - income countries. Three findings are particularly relevant.

First, the financial requirements are immense. Closing the gap will require nearly $ 100 million in 1975 dollars of additional investment in the staple food sector alone for the 36 low-income, food deficit countries.[4] This is for capital expenditure and does not include maintenance allowances and other recurrent expenditure. In agriculture, additional annual capital costs (according to FAO estimates, they are about five times as much). Raising capital expenditure to cover the nonfood sector, which is vital to income, raises this number to about $ 140 billion for the 15 year period of 1975 to 1990. To make up for the slower past five years, it is reasonable to estimate that the investment requirement for the next decade will average $ 11 billion a year in 1975 dollars.

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2. Kenneth L. Bachman and Leonardo A. Paulino, *Rapid Food Production Growth in Selected Developing Countries*, Research Report No. 11 (Washington, D. C.: IFPRI, October 1979).

3. John W. Mellor, "Food Price Policy and Income Distribution in Low - Income Countries", *Economic Development and Cultural Change* (October 1978) : 1-26.

4. Peter Oram, Juan Zapata, George Alibaruho, and Shyamal Ray, *Investment and Input Requirements for Accelerating Food Production in Low-Income Countries by 1990*. Research Report No. 10 (Washington, D C. : IFPRI, 1979).

Annual foreign assistance to these countries for these purposes now runs about $ 3.5 billion for both recurrent and capital costs. Given the difficulty low-income countries will have to achieve the required level of investment, as well as the much larger recurrent costs, success will surely necessitate a large increase in foreign assistance. For example, $5.5 billion will be needed to cover half the investment and $ 6.5 billion to cover 20 per cent of a very conservatively estimated additional recurrent cost, for an annual total of $ 12 billion. This is nearly 3½ times higher than the present level of assistance and would implicitly require a somewhat different allocation among countries as well.

There are those who claim that many low-income countries would have difficulty absorbing these levels of expenditure. However, much of the absorption problem arises from overlooking recurrent costs, to which an enlarged amount of foreign assistance should be allocated. A large portion of investment is intended not only for irrigation, but for roads and electrification, relatively expensive items which are currenty neglected in foreign assistance. Large expanding personnel training, which further increases future absorption capacity. Also, the current and future allocations of assistance among countries should be implicitly different and therefore more efficient in meeting the food objective than are current allocations.

Second, the effort needed is so great that major increases and improvements must be made in all the traditional approaches to agricultural growth. Massive investment in irrigation accounts for nearly half the total investment and a comparable proportion of the increased output. Fertilizer investment accounts for another major portion of the investment and of the added output. If financial constraints, energy scarcity, or environmental considerations eliminate any one of these sources of growth, there necessarily will be a tremendous additional burden of food insufficiency for the poor to bear. The estimates assume increasing efficiency in use of resources, and projections beyond 1990 will be able to reflect the application of research yet to be done as well as improving managerial capabitities in Third World countries.

Third, very little of the increased production will be attributable to expanding cultivated area. Thus, the bulk of the increase must come from multiple cropping and higher yields resulting from the use of irrigation, fertilizers, and new crop varieties and practices. In any case, new land also will require new investment and research as to how best to utilize it. Overall, irrigation expansion is particularly crucial. It is the basis for increased double cropping, for the most responsive of the high-yield crop varieties and practices, as well as for greater surety of crop size. Electrification for tapping ground water is a particularly important aspect of the total irrigation picture because of its close relation to double cropping and assured water supply[5].

Fourth, greatly expanded research is essential to several aspects of the

5. A forthcoming IFPRI research report dy Dharm Narain analyses this point in detail.

production effort. Even with the stated increase in irrigation assured, an unprecedented sustained rate of increase in yields per acre is required. New varieties and practices are required to foster multiple cropping. Land not now being cultivated may respond to improved management based on imaginative research. Such progress can occur only if there is an immediate increase in personnal training, building institutions, and financial expenditure.

It follows from this analysis that if the poor of the world are to eat even marginally better by 1990, research and investment of massive proportion, directed along the tried and tested routes explored during the past few decades, will be required.

This view does not ignore the newly dramatized long-term problems of energy and environment. It recognizes the urgency of the current situation, the very modest share of resources currently used by developing countries, and that the short-term adjustment to energy depletion will have to occur largely in the developed countries. Concurrently with essential thrusts for results in the 1980s there must be research on the means to conserve and find alternative sources of energy. This effort should include exploration and development of vast untapped conventional energy sources in the Third World, including oil, coal, and hydro-electric power. In the meantime, known effective methods of increasing production must be persued at a greatly accelerated pace. The conscience of the developed and developing worlds alike and the growing political power of the Third World both demand this.

A further note is needed on the research role of the developed countries, which have experience in building agricultural research systems and large stocks of trained researchers. It is only natural for the developed countries to emphasize research support in foreign assistance programs. Research out-put is a vital facet of agricultural growth in a world that has a land and energy shortage. Because research costs are such a small part of total agricultural investment requirements and the returns so high, finances should not be allowed to limit growth in the system. The number of trained people and institutions to facilitate their work limit efficient research growth. The international agricultural centers are perhaps less constrained at present by personnel and institutional capacities than many national systems and so may continue to grow rapidly, even as a major effort is made to expand national systems through large training and other support efforts. In both international research systems, leadership from the donor countries probably has a relative advantage when compared with many other areas of importance in agricultural growth. Thus, even if the donor countries feel that they can no longer pull their full weight in meeting the investment requirements of growth, the very least they can do is to sustain a rapidly growing contribution to research capabilities.

Food and Development

Providing adequate food for the low-income people of the Third World can not be separated from the broad problems of development. Solving the food problem through improved subsistence production alone is not possible. Subsistence production does not provide for

the large number of people with little or no land and the inevitably low incremental employment content of the essential new technologies. It also does not sustain local food consumption in the face of local crop failures.

It is true that increased irrigation usually results in large increases in employment, particularly if multiple cropping is possible. High-yielding varieties generally have been associated with increased employment. Nevertheless, the sum of processes for employment sufficiently to solve either the problem of adequate effective demand for food by the poor or sufficient demand to encourage output. Demand can be created indirectly as the increased income to cultivators stimulates demand for a range of commodities, whose production provides necessary employment and incomes to the landless and near landless.[6] However, for these complex and still poorly understood process to work, there must be adequate infrastructure to connect villages to provincial towns and major cities, electricity to power small industries, and international trade for selling excess supplies of labour-intensive and capital-intensive goods.

The same infrastructure so essential to employment growth facilitates security of minimum food supplies in the face of fluctuating weather. Subsistence farming cannot provide the margin of income or the transportation system for meeting weather crises. Elimination of famine in the world has been almost entirely the result of transportation systems that bring food from areas of good crops to areas of poor crops and to rising incomes which allow normal consumption well above minimum needs, and thereby provide a margin for reduction in poor years. Given the randomness of the weather, storage that is sufficient to make each small region self-contained is prohibitively expensive except in areas of assured irrigation or unusually stable weather.

Thus, food production, employment, rising incomes, greater diversity of production, and the integrating infrastructure of communications and education must all march together. Policy and investment must reflect this reality.

Food and Global Interdependence

Low-income Third World countries can close their food gaps during the next decade only if they make a major effort of their own, as well as receive substantially larger capital transfers and research assistance. Middle - income Third World countries will require more food imports and trade relationships to pay for this food, as well as capital-intensive imports of machinery and intermediate products. From these relationships the industrial nations benefit from rapidly growing markets for capital and technology-based goods, mitigation of inflation by importing labour-intensive goods, and an interdependence of economies favouring amicable relations.

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6. The International Food Policy Research Institute is commencing a major line of research to establish the nature of these linkages and how they may be encouraged.

Failure of the industrial nations to do their part will lead to a more autarchic and, presumably, less understanding world. The potential for such autarchy has increased as a result of the otherwise desirable, rapidly increasing opportunities for intra-Third World trade.

The apparent incapability of Western nations to transfers of income to oil producers by any means except alternating periods of rapid inflation with periods of recession is not conducive to fostering close, amicable relations with the Third World. The recessionary periods dry up markets for Third World countries and cause slow growth in their exports and their overall growth Fostering exports of Third World countries is essential to their agricultural and employment strategies and offers prospects of their leading the industrial countries to foster, less inflationary growth. For the reasons discussed earlier, a growth strategy which emphasizes food, employment, and, hence, poverty relief, reinforces these relations.

Conclusion

Greatly expanded levels of research and investment are the only hope for reducing hunger during the next decade. To do so at the requisite level requires increased effort by poor and rich countries alike. In the short run, this effort and the necessary ancillary processes of development will reinforce the need for energy conservation in the developed countries and a massive, expensive research effort to develop alternative sources of energy and means of increasing efficiency in energy use.

Failure in either short-run or long-run efforts will inevitably bring conflict between the older developed nations and the new developing nations in the consequently harsh context of increasing interdependency. Success can lead to a further round of mutually reinforcing growth that may well be analagous to the 1960s when accelerated growth in Europe and Japan drew the economy of the previously dominant United States along with them.