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BACKGROUND PAPER ON THE WORLD

FOOD SITUATION

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1. DIMENSIONS OF THE FOOD PROBLEM

1. The "world food problem" has receded in the public consciousness since the atmosphere of crisis of 1973-74, when global scarcities resulted in sharp price rises for basic foods. The reduced concern is due in part to good harvests in many areas in recent years and the rebuilding of grain stocks in several important producing countries. The events of 1973-74 at least had the beneficial effect of encouraging careful study and a more complete understanding of the various dimensions of the food problem and the means of alleviating it. These events have also led to new initiatives by the World Bank and others concerned with the world food situation.

2. The world food problem has at least three important dimensions. The first, and that which has perhaps attracted the most public interest and study, is the adequacy of market supply and demand of basic foodstuffs, typically defined as the cereal grains that among most developing countries provide on average at least three-quarters of basic calories. It was scarcity in global market supply in 1973-74 that triggered the doubling or tripling of world grain prices in those years. This market gap is the outcome of production decisions by millions of small and large farmers, together with the impact on food demand of global population and income growth. In estimating the size of the gap in future years, the factors which affect demand can be projected with greater reliability than those which affect supply; but uncertainties exist even with demand. Moreover, price changes of food play a basic part in equating supply and demand, and several studies which attempt such projections have not included the effects of this balancing mechanism. Nevertheless, it is evident that market demand for basic foodstuffs in many countries (see below) is growing more rapidly than domestic supply. Projections of these different growth rates 10 to 15 years into the future imply growing market deficits, sometimes of a very large order. The aggregate net deficit among these countries is highly dependent upon underlying assumptions, but the most recent estimate by the International Food Policy Research Institute (IFPRI) of something in excess of 120 million tons (which is the equivalent of total consumption in India today) is plausible if past trends continue. This matter is discussed in greater detail in a later section. The projected deficit could be reduced if domestic production in these countries grows more rapidly. More rapid growth is possible, but whether this is realized depends to an important degree on weather, as well as development efforts by the countries and aid donors concerned. Continued high priority for agricultural development would be required.

3. It is useful to divide the food deficit countries into three categories based on income levels. Following IFPRI, the low income countries may be defined as those with 1973 per capita incomes of less than \$300 a year. The second group have per capita incomes above \$300. Most of these countries are in Latin America, North Africa and the Middle East, excluding OPEC member countries. The third group of developing food deficit countries includes the OPEC countries and others with high foreign exchange earnings such as Korea, Malaysia and Taiwan.

4. A second important dimension of the world food problem is that many of the countries with growing market deficits are in the first group and are unable to purchase their food requirements in the world market because of their inadequate supplies of foreign exchange. They are not able to import a growing volume of food and, at the same time, purchase the capital goods and other non-food items required for sound economic development. Most of this group is in Asia and Sub-Saharan Africa, and it is in these regions that the core of the food problem is found. For these countries, the alternatives to meeting future market requirements are to rely on larger food imports at concessional prices or to expand local production. The first alternative is politically demeaning, and of high risk in view of the disappointing growth of global food aid in recent years. Moreover, large shipments from abroad are difficult logistically and may not always reach the people most affected. (See Section II.) The second alternative is technically possible in many countries and is one of the premises upon which World Bank agricultural lending is based.

5. One element in this dimension of the global food situation is the declining numbers of basic food exporting countries and the emergence of North America, viz. the U.S. and Canada, as the only major region of the world capable of producing a reliable, expanding volume of grain for export. For example, since 1934-38, Asia and Africa have moved from positions as small net exporters to importers of 40 million tons of grain annually. Grain exports from North America grew from about 5 million tons in the mid-1930s to more than 90 million tons in the mid-1970s, and now account for well over half of global grain trade. On present trends this growing concentration of export supplies will continue. (See Section II.)

WORLD GRAIN TRADE, 1934-38 to 1976^{1/}
(million tons; + export; - import)

<u>Region</u>	<u>1934-38</u>	<u>1948-52</u>	<u>1960</u>	<u>1970</u>	<u>1976^{2/}</u>
N. America	+ 5	+23	+39	+56	+94
Latin America	+ 9	+ 1	-	+ 4	- 3
W. Europe	-24	-22	-25	-30	-17
E. Europe and USSR	+ 5	-	-	-	-27
Africa	+ 1	-	- 2	- 5	-10
Asia	+ 2	- 6	-17	-37	-47
Australia, N. Zealand	- 3	+ 3	+ 6	+12	+ 8

^{1/} These data include the trade in foodgrains between developed and centrally planned economies.

^{2/} Preliminary estimates. The North American total for 1977 will be about 100 million tons.

6. A third dimension of the world food situation is the problem of malnutrition among large numbers of the world's population, most of whom are poorly nourished because they do not have access either to land to grow more food or income to purchase it. The nutritional needs of this group are generally additional to the market demands mentioned earlier. While the size of the malnourished population cannot be determined with precision, there is evidence that its numbers are increasing. The FAO estimates that the number of malnourished in the world grew from some 400 million in 1969-71 to more than 450 million in 1972-74, a rate which exceeds population growth. Studies by staff of the World Bank suggest even higher figures. In the early 1970s, average calorie supplies in more than 70 of 128 developing countries were below nutritional requirements, with particularly serious undernourishment occurring in Africa and several populous countries of South and East Asia. The nutrition situation for 1975 and 1976 among most developing countries appears to have changed very little from 1972-74, despite generally good grain harvests. The persistence of undernutrition, even where food supplies meet market demands at acceptable prices, is one of the most challenging problems facing governments and the international community. (See table on following page.)

The World Food Situation Since 1974^{1/}

7. From a global perspective, food production since 1974 has expanded rapidly enough to meet world market demand in an environment of generally declining prices. However, these global figures mask wide regional variations. The FAO estimates that world food production, which is dominated by the output of grains, expanded by about 3% in both 1975 and 1976, but only 1.4% in 1977 because of reduced production in some major food-producing developed countries. Production in the developing countries grew at 2% in 1977, or more rapidly than the 1% increase in the developed countries, although the relatively good performance in the developing countries was due largely to the 4% gain in the South and East Asian region resulting from the good Indian harvest. Food production in the Middle East and Africa showed no increase in 1977 from 1976 levels, and grew by only 1% in Latin America. These figures imply declining per capita food production in all developing regions except South and East Asia (again the result of India's good performance) and indicate a particularly difficult situation in much of Africa where, according to FAO, the 1977 per capita index of production is 10% below the 1961-65 level. In 1977/78, cereal imports for all developing countries are expected to achieve record levels in excess of 65 million tons, while, among the UN's "most seriously affected" countries, import dependence in 1977/78 is projected to increase to 14.5 million tons, or some 16% above the previous year's levels.

^{1/} This section is based on World Food Council materials prepared for the forthcoming WFC, in particular, "Assessment of the World Food Situation and Outlook", WFC/1978/3, 3 April 1978.

ESTIMATED NUMBER OF PERSONS WITH FOOD INTAKE BELOW THE
CRITICAL MINIMUM LIMIT^{1/} BY DEVELOPING REGIONS EXCLUDING ASIAN
CENTRALLY-PLANNED ECONOMIES^{2/}

Region	Total Population		Percentage below 1.2 BMR		Percentage below 1.2 BMR	
	1969-1971	1972-74	1969-71	1972-74	1969-71	1972-74
	Million		Percent		Million	
Africa	278	301	25	28	70	33
Far East	968	1,042	25	29	256	297
Latin America	279	302	15	15	44	46
Near East	167	182	18	16	31	29
MSA ^{3/}	954	1,027	27	30	255	307
Other developing market economies	738	800	20	18	146	143
Total developing market economies	1,692	1,827	24	25	401	455

^{1/} 1.2 times the Basal Metabolic Rate.

^{2/} Any difference between figures given in this table for 1969-71 from those quoted in the document "Assessment of the World Food Situation, Present and Future", presented at the World Food Conference 1974, is largely due to revisions in the estimates of per capita food supplies as well as the population figures.

^{3/} Countries defined by the U.N. as being "most seriously affected" by global inflation and worsening of their terms of trade.

Source: FAO Fourth World Food Survey, 1977.

8. World cereal production, which accounts for most of total food production, declined about 2% in 1977, reflecting the combination of an 8% drop in wheat output, a record high rice crop and static output of coarse grains. The outlook for cereal production in 1978 is highly tentative, although wheat output in the U.S. may decline by more than 10% due to government programs, while adverse weather in Australia and Argentina is expected to reduce production there.

9. Generally favorable harvests since 1972-74 have permitted some rebuilding of the global grain stocks which are required for global price stability. According to FAO, that build-up is expected to continue in 1977/78 with carryover of cereal stocks outside of the USSR and China up by another 10% over 1976 levels. In volume terms these cereal stocks are expected to exceed 175 million tons, equal to about 19% of annual consumption. This can be compared with less than 110 million tons in 1974/75, an amount equal to only about 12% of total consumption. Among the cereals, wheat stocks in 1977/78 are expected to be down slightly from 1976/77 levels. They make up about 45% of total cereal reserves, and are heavily concentrated in the developed exporting countries, primarily the U.S. Rice stocks, in the neighborhood of 20 million tons, are somewhat less adequate relative to annual consumption. Disappointing cereal crops in the USSR and China may lead to a drawdown of stocks in those countries and add additional uncertainty to the global stock picture. Significantly, about two-thirds of total cereal stocks are held in the major exporting countries. Most traditional grain importing countries have made little progress in rebuilding stocks, although this is an increasingly important policy objective for many governments.

10. Increased variability in world grain prices is another important feature of the world food situation in the 1970s. For more than 15 years, beginning the mid-1950s, the world price of wheat was remarkably stable at something in the range of US\$50-75/ton. This stability was due in large part to abundant stocks of grain held primarily in the U.S. and Canada. With the sharp drawdown of stocks in 1973-74, as a result of short harvests in several large importing countries, wheat prices rose to more than US\$200 in the 1974/75 season. Rice prices rose even more sharply. Grain prices have fallen from their historic highs in 1974/75, although they remain about twice the level of the late 1960s and, in combination with generally favorable weather, have contributed to increased production in recent years.

11. Higher grain prices are quickly followed by higher consumer prices for food, both in developing and developed countries. This impact is largest in the developing countries where food is the major determinant of the level of consumer prices. The poorest in those countries are of course most seriously affected when prices rise. But even in most OECD countries food accounts for 30-55% of the consumer price index, with the significant exception being the U.S. where it represents only 22% -- the lowest percentage in the world. In the OECD countries consumer prices rose on average less than 4% annually in 1961-71, 4.7% in 1972, 7.7% in 1973 and more than 12% in the March 1973-March 1974 period. Clearly, consumer interests in both developed and developing countries are served by global stability in grain prices. This requires a combination of adequate reserves, a smoothly functioning world market system and, in the countries which cannot afford grain imports, increased domestic production.

11. PROSPECTS THROUGH THE 1980'S

12. The current situation of abundant grain stocks provides valuable opportunity to develop national and international mechanisms to deal with future periods of global food scarcity and to attack the persistent problems of inadequate supplies among poor countries and poor people. These might include increased food aid, supply guarantee schemes and meaningful progress toward a system of national and international reserves. They must include continued high priority by aid donors and low-income food-deficit countries for broadly-based agricultural development.

13. Recent weather-induced improvements in food production do not alter the conclusion of the World Food Conference that today's food exporting countries (primarily North America, but including Australia and New Zealand) would as a group continue to enjoy a surplus position while much of the rest of the world continues to increase its imports from them. Trends in world trade of food production since the Conference appear to confirm that conclusion. The U.S. is the leading grain exporter, and U.S. agricultural exports increased from \$3.3 billion in 1954-55 to more than \$23 billion in 1976-77, almost half of that increase taking place during the last ten years.^{1/} The U.S.'s share of world agricultural exports also increased from 12.3% in the 1950s to 16.5% in 1976-77.

14. Future prospects for agricultural exports from major traditional exporters appear to be good. Studies by the United States Department of Agriculture suggest that in 1985 the U.S. would produce at least 1/5 of the world's grain output, 1/3 of the world's meat output and around 1/2 of the world's oil-meal commercial output. Its share of grain and oil-meal exports could exceed 50% of the world total. Most of the agricultural exports from large traditional exporters such as the U.S. will continue to go to the developed countries in response to higher incomes. But much of the expected increase in world food demand will take place in the developing world resulting from growth in population and incomes. Most developed country exporters appear to have the capacity to meet local demand and continue to supply larger quantities on the world market.

Food Production in Developing Countries

15. But because of balance of payments constraints and the need to address the nutritional problems of low-income groups, it is imperative that the developing countries accelerate their rate of food production. Broadly-based, rapid economic development of low-income countries complements the agriculture of the developed countries. Korea and Taiwan, which not long ago were dependent on concessional food shipments, are now important markets for commercial agricultural exports from traditional exporters. Today the bulk of humanity is in low-income developing countries where large segments of the population receive inadequate food intake. The nutrition gap has been

^{1/} USDA Release, "Foreign Demand and Export Potential for U.S. Farm Products", May 18, 1978.

estimated by IFPRI to be 64 million tons. During the early stages of development the bulk of the population is in agriculture; and, if agriculture grows slowly, per capita income grows slowly as well. Hence broad-based agricultural growth holds the key to income growth. Typically, when a nation reaches the middle-income stage, the economy is sufficiently diversified for it to have enough foreign exchange to meet its additional food needs. We may expect that a number of low-income countries will pass this middle phase in the coming decades: a position in which Taiwan, Korea, Mexico and Brazil find themselves today.

16. When it was concluded at the World Food Conference in 1974 that poor, low-income developing countries must grow a large part of their own food needs at home, it was in recognition of the fact that market demand will tend to outrun supply and that the poor countries will not have adequate foreign exchange to augment their supplies through imports. Moreover, increasing food production means increasing incomes and productivity in agriculture, which is an indispensable step in the process of economic development.

17. Many low-income developing countries have demonstrated the capacity to grow enough food, as evidenced by the "green revolution" in Asia during the late 1960s. Food-deficit countries like India, Pakistan, Indonesia, Philippines and Sri Lanka should be able to grow much of their food requirements at home. However, food aid will continue to be important especially to supplement food shortfalls due to bad weather, etc. There are cases, as in some Sahelian countries, where food aid may become a structural characteristic of their development. It has to be recognized, however, that in general continued large-scale dependence on food aid may discourage the growth of agriculture in developing countries. Moreover, even if food aid is available on a massive scale, it is frequently not logistically possible to move it in time, and to those who actually need it. Food aid must be recognized as a vital but relatively small element in the global food equation. But efforts must be made to ensure that it is used to best advantage. What is needed is to ensure the reliability of supplies and make selective and judicious use of food aid.

Import Requirements of Developing Countries

18. The World Bank, IFPRI, FAO, and others have made projections of future food deficits and import requirements of developing countries. To give some order of magnitude one may take the IFPRI projections. The population of developing countries is projected to increase from 2 billion in 1975 to 2.9 billion in 1990,^{1/} of which 90% live in food-deficit countries. In 1975, the gross food deficits^{2/} were 36 million tons of grain equivalent. By 1990 the shortfall is projected to be in the range of 120 to 145 million tons if past trends continue.

^{1/} IFPRI Research Report, "Food Needs of Developing Countries: Projections of Production and Consumption to 1990," December 1977.

^{2/} The sum of projected deficits of major staples in the food-short developing market economies of the world.

19. A key question is to what extent will developing countries be able to import this amount of food on commercial terms? Countries differ with respect to importing capacity. At one end of the spectrum are the OPEC and other high-income countries, including South Korea and Taiwan, with growing industrial capacity and export earnings. This group is likely to have ample foreign exchange and will continue to depend on commercial imports. In 1975 the group imported 13 million tons; by 1990 imports in the range of 30 to 35 million tons may be required.

20. Similarly, foodgrain imports of several middle-income non-OPEC countries of the Middle East and Latin America are projected to increase from 11 million tons in 1975 to 20 to 25 million tons by 1990. Again, many of these are primarily commercial importers. A few developing countries will export cereals and should be able to meet basic food needs from domestic production. These include Argentina, Thailand and Pakistan.

21. At the other extreme are the low-income food-deficit countries of Asia and Africa, where two-thirds of the population of developing countries live. This group forms the core of the world food problem. Their present market gap is small -- only 12 million tons in 1975 -- but is expected to rise to 70-80 million by 1990. When the costs of these amounts are compared with the countries' prospective foreign exchange earnings, it quickly becomes apparent that commercial imports of this magnitude cannot be financed.

III. WORLD BANK ASSISTANCE TO AGRICULTURE AND RURAL DEVELOPMENT

22. The World Bank and its affiliate, the International Development Association (IDA), will be lending almost \$3,300 million for agriculture and rural development during the fiscal year ending June 30, 1978. The year's record lending brings the cumulative total of Bank and IDA commitments for agriculture and rural development in the last five fiscal years to some \$10,000 million (in current dollars) -- making the Bank and IDA the largest source of multilateral assistance for this purpose.

23. Increased Bank and IDA lending for agriculture and rural development is part of a strategy first enunciated by the World Bank President McNamara in 1973. The objectives of the Bank's rural development policy include sustained increases in per capita output and incomes, expansion of productive employment and greater equity in the distribution of benefits of growth.

24. The Bank also tries to alleviate the world's food problems by increasing food production in the developing countries where the malnourished people are. This in turn means increasing the productivity of the small farmer. Recent studies in developing countries demonstrate that, given proper conditions and incentives, the small farms can be as productive as big farms.

25. The Bank's lending for agriculture and rural development during the past five years has been as follows:

World Bank/IDA Lending for Agriculture and Rural Development

<u>Fiscal Years</u>	<u>Amount in \$ Millions</u>
1974	956
1975	1,858
1976	1,628
1977	2,303
1978	3,300 (Estimate)

26. Estimates are that at full development the agriculture and rural development projects financed by the Bank and IDA during the five years would result in additional production of 13 million tons of cereals annually in the late 1980s.

27. Figures available for 359 agriculture and rural development projects approved during the past five fiscal years indicate that the number of direct beneficiaries may exceed 18 million farm families. Most of the beneficiaries are small farmers with low per capita incomes. Thus, over the period FY 1974 to 1978, some 100 million people stand to benefit directly from Bank and IDA assisted projects in this sector. Moreover, within the total for agriculture and rural development, there has been a sharp rise in the share of lending for rural development -- that is, for projects in which more than half the direct benefits are expected to accrue to the rural poor. In FY 1978, the share of rural development is estimated to be 55%, compared with 61% in 1977, 50% in 1976 and 53% in 1975.

Evolution of the Bank's Strategy

28. It is important to emphasize the evolving nature of the Bank's approach to agriculture. At first it made no loans for agriculture, because agriculture was not seen to be a major problem. Development thinking concentrated on industrialization, transport, power, etc. It was assumed that there was enough land and local labor to produce all the subsistence needed by local populations. However, the Bank soon recognized that agricultural growth and increased production was necessary for development, and that agricultural development required involvement in a wide range of rural investments. The Bank embarked on a very wide spectrum of activities -- irrigation, credit mechanisms, agricultural research, extension services; all the panoply needed to make farmers more productive.

29. By widening its lending, the Bank was increasing production, but the benefits of this increase were not necessarily widespread. A classic illustration of this has been the Bank's lending for livestock in Latin America. Its first efforts were made largely through commercial banks. Funds were made available to governments which passed these through commercial banks to large livestock producers. The large cattle ranchers increased production, and both exports and growth increased. The Bank's analysis showed, however, that these loans had little direct impact on the creation of jobs, and that the income that was generated from these investments was not being widely distributed. It appeared to us that very large numbers of small farmers were getting no benefit whatsoever from loans of this kind. The Bank moved, therefore, to the next phase of lending: that of rural development. This is the phase in which the Bank is at the moment, and involves trying to raise the productivity and incomes of many who seldom benefit from traditional investments.

30. Rural development, in our terminology, means addressing poverty head on. To do so, the Bank has shifted its emphasis from financing large-scale producers to financing small-scale producers, although large farmers are assisted in many projects. The importance of this small-farm thrust is nowhere more evident than in dealing with the rice producers of Asia, especially in, say, West Bengal in India, where there are extremely large numbers of very small producers and where rice production has tended to be stagnant.

31. Part of the purpose of this new emphasis is to deal with the problem of poor people and low consumption. We strongly believe that if the small producers of, say, West Bengal increase their production of rice -- and our projects indicate that this can be done -- they will then consume more of this rice and will have a larger market surplus. This in turn will help the country in two ways: by increasing production and reducing the need for imports; and by raising the levels of consumption and nutrition of low-income groups.

Capital Requirements of Agricultural Development

32. A number of exercises have been attempted to evaluate the capital requirements for agricultural development and food production. The major lesson which the Bank has learned is that we have to reject many previous assumptions about agricultural development in developing countries which were a carryover from "colonial" thinking. We thought that there was enough land and enough labor; that the indigenous population could produce enough food for themselves; and that the main constraint on food production was a demand constraint, i.e., one could easily produce food but there was no market for it. We are finding out in reality that food production requires more and more capital and that low-cost means of agricultural production are very difficult to find. In some parts of the world, the World Bank has certainly evolved low-cost improvements. It has worked to help governments to improve their research and extension services, their credit facilities and so forth. This has been effective -- but, in terms of infrastructure, we have found that there is simply no cheap means of developing agriculture. The amount of this capital requirement varies enormously and it is almost impossible to give a figure. But we do know that requirements for development of irrigation alone are well in excess of \$100 billion. Total flow of funds from all sources to developing country agriculture was just over \$5 billion in 1976.

3. The problem is becoming more serious and the capital requirements greater. This worsening is due in great part to the population side of the equation, especially when one wants to deal with nutritional issues instead of concentrating merely on the issue of market demand. Recent progress has been heartening, especially in South Asia, but this should not blind us to the tremendous task of meeting both market requirements and nutritional needs of the poor.