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THE WORLD FOOD SITUATION

[By Harry Walters*]

This is a time of great anxiety about the world food situation. For most of the two decades before 1972 the world had adequate supplies of food to meet effective demands, provide 8 to 10 million tons of grain and other foods annually in food aid and still maintain large grain stocks. The prices of most foods were generally stable or declining. Population increased by more than 1 billion and the life expectancy of this larger population increased substantially.

Since 1972, declines in food production have produced food shortages and high food prices, fertilizer shortages and high prices have also developed, grain stocks are extremely low and food aid shipments have dwindled. Famine and serious food shortages have received widespread attention.

It looks now—with no increase in food production and a decline in grain production in 1974—as though we will face these conditions for another year or two unless 1975 and 1976 turn out to be especially favorable.

ALTERNATIVE JUDGMENT

These developments have produced many sharply conflicting judgments about how and why this transformation took place and what we can expect in the future.

—The Environmental Fund has concluded:

“We have reached, or nearly reached, the limit of the world’s ability to feed even our present numbers adequately.” They feel “the chances of increasing the world’s per capita supply of food are poor.” and that regardless of how food aid is handled, “a goodly number of human beings will die.”¹

—Lester Brown and Erik Eekholm foresee:

“A period of more or less chronic (food) scarcity and higher (food) prices, (because) the soaring demand for food . . . has begun to outrun the production capacity of the world’s farmers and fishermen.”²

These two judgments see the explanation for the current situation in the actual or approaching exhaustion of the world’s capacity to produce more food in the face of continued rapid population and economic growth. A view similar to that of Malthus in the late 18th century and one expressed numerous times over the past two centuries. The future thus becomes a process of facing up to this situation. In

*International Bank for Reconstruction and Development. The views expressed are the author’s own and do not reflect policies or views of the World Bank or the U.S. Department of Agriculture.

¹ The Washington Post, October 25, 1974.

² *By Bread Alone*, Overseas Development Council, Praeger, 1974.

the first case, people will starve. In the second, people will have to change the way they consume food so that more of the limited and expensive future food supply is shared with the poor. Consistent with this second view is the proposal that:

If Americans would decrease the meat they eat by 10 percent, it would release enough grain to feed 60 million people.³

A further ominous note has been raised by some meteorologists. Reid Bryson, Director of the Institute for Environmental Studies of the University of Wisconsin has said:

—There is a very important climatic change going on right now . . . if it continues (it) will affect the whole human occupation of would release enough grain to feed 60 million people.⁶

This and similar views have been expressed to explain the drought in Africa and interrupted monsoons in Asia.

A third judgment is:

—While the situation for the past two years and for the next year or two is precarious, it has resulted from a combination of factors which can be overcome. In this view, "For the next decade or so the probability is good that (world) food production, in total, will keep a half step ahead of population growth, but there will be times and places of critical shortage".⁵

This is essentially the conclusion of the UN's assessment of the world food situation⁶ and of an assessment of the situation by ERS,⁷ a study which I helped to prepare and which should be before you now. It is also my personal judgment of what has happened and what is *likely* to happen. I stress *likely*. It is not necessarily what I think *could* happen, nor what I think *should* happen.

The view that there are specific, correctable factors which produced the present situation and that improvements in the world food situation can be achieved, recognizes that the present situation is indeed serious and that major problems must be solved if future progress is to be made. It also recognizes that many of the problems which face us are not self correcting. Moreover, while the past might seem in many respects preferable to the present, a resumption of the pattern of food production, consumption and distribution which emerged during the 1950's and 1960's would not solve the fundamental problems which underlie the world food situation. Of these the most significant are:

- The imbalance in food production between the developing and developed countries;
- The growing dependence of the developing countries on food imports and the sporadic but increasingly large food imports of some planned economies;
- The continuation of agricultural surpluses in many developed countries; and
- The serious human problem of malnutrition among a large segment of the world's poorest people.

³ Jean Mayer, *Newsweek*, Nov. 11, 1974.

⁴ *Fortune*, Feb. 1974.

⁵ Don Paarlberg, *Food and People*, Philadelphia, Oct. 22, 1974.

⁶ United Nations World Food Conference, *Assessment of the World Food Situation, Present and Future*, Rome, November 5-16, 1974.

⁷ *The World Food Situation*, Economic Research Service, U.S. Department of Agriculture, December 1974.

To state such a judgment in the face of widely differing views is not enough, however. Too much is at stake. Since I was closely involved in the ERS Assessment, I would like to review briefly the past two decades, the recent development and a number of alternative views of the future, to indicate how some of these judgments were arrived at.

LONG-TERM TRENDS

From 1954 to 1973 world food production increased faster than population—production at 2.8 percent annually and population at 2 percent. This meant an annual increase in per capita food production of 0.8 percent.

On the average, therefore, the 3.8 billion people in the world in 1973 had 21 percent more food to eat *per person* than the 2.7 billion people in 1954.

Food production increased about 70 percent in both the developed and developing countries. The developing countries made very significant progress.

But population growth in the developing countries increased from 2 to 2.5 percent per year between 1950 and 1973 while in the developed countries it has declined to just under 0.9 percent now.

Because of these differences in population growth rates, most of the per capita improvement has been in the developed countries (1.5 percent annually), while the developing countries only marginally improved their per capita production (0.4 percent). Some developing countries and some groups in many countries did not experience any improvement. The significance of this is more evident when we realize that 86 percent of the world's population growth now comes in the developing countries—61 million out of the 70.5 million annual increase in 1973.

In these two decades, total world food production declined only once—in 1972. Although this decline was small—only 1.6 percent at the world level—it virtually wiped out the per capita progress in most developing country regions, putting them back where they were a decade ago.

Grain production declined by 35 million tons in 1972, vastly exceeding the small declines of 5 and 1 million tons in 1963 and 1965. About 25 million tons of additional grain is needed each year to maintain the current level of per capita use. Thus the shortfall in 1972 was a major setback and, after a substantial increase in 1973, grain production fell again in 1974. The shortfalls in grain production resulted first in large imports by the USSR in 1972-73 and by the developing countries in 1973-74. Much of this grain came out of the United States.

These long-term trends point up fundamental weaknesses in the world's production and consumption of food:

- Per capita production progress has been largely in the developed countries where more food has been produced than was consumed at prevailing price levels. This contributed to the surpluses which provided grain stocks, stable prices and large amounts of food aid.

- The developing countries were becoming more dependent on the developed grain exporters for food, which was relatively inexpensive and about half their grain imports were made under concessional arrangements.
- The planned economies, especially the USSR, were also becoming more dependent on the grain exporting countries to make up their sporadic but increasingly large grain deficits.

DEVELOPMENTS DURING THE SIXTIES

The world emerged from the 1950's with very large grain stocks in the developed exporting countries, especially the United States. These resulted largely from farm price support programs. Excluding rice, carryover stocks amounted to over 175 million tons in 1962-63 while annual world consumption was about 645 million tons, and annual world exports between 70 and 80 million tons.⁸ These were probably some 80 million tons above what was needed at that time to carry the world through from year to year. There was widespread feeling then that these stocks should be reduced. They represented a large burden on taxpayers and seemed a reflection of uneconomic use of resources.

The general proposition that stocks should be reduced prevailed throughout the 1960's, but efforts to do so were interrupted by other events. The Russians had major grain crop failures in 1963 and 1965. Unlike their earlier response to these shortfalls, they imported large amounts of grain after both crop failures. India also experienced major cereal crop failures in 1965 and 1966 and imported large amounts of grain as a result. The combined effect of these events raised grain exports from 70 to 108 million tons between 1960-61 and 1965-66. World carryover grain stocks fell to 115 million tons in 1966-67, 60 million tons below the 1961-62 level.

During 1963-66 there was widespread fear of an approaching World Food Famine.⁹ In the face of these increasing needs for grain, the four major exporting countries expanded their wheat area, and their wheat production rose from 55 to 81 million tons between 1961-62 and 1966-67.

The fertilizer industry also responded with a dramatic 20 million ton increase in capacity, assisted by important technological and transport improvements and low energy costs.

A major effort was exerted to raise production in the developing countries through the Green Revolution, especially in South and Southeast Asia, with higher yielding wheat and rice seeds and fertilizer on irrigated land. Associated with this were a number of incentives to developing country farmers in the form of credit, input packages and support prices.

The combined effect of these efforts produced a striking increase in world grain production between 1966 and 1969. Grain exports fell back to 90 million tons and in 1969-70 world grain stocks reached a

⁸ There are apparently as many grain stock figures as there are days in the year and they change about as often. The ones used here are from the August 1974 FAS Grain Bulletin.

⁹ *The World Food Problem*, A Report of the President's Science Advisory Committee, 3 Vols., 1967.

new peak of nearly 190 million tons. During these years world grain production exceeded consumption by a substantial margin.

It is difficult now to recall the sense of pessimism about the future of food grain markets that prevailed during 1968-71. Projections at that time showed long-run surpluses and falling prices for wheat and rice. Only feed grains seemed promising.

In response to this "surplus" of grain, the major grain exporters reacted strongly. They reduced their wheat area dramatically beginning in 1968 shifting to feed grains or out of grain entirely. By 1971 their wheat area had fallen back to 33 million hectares from the peak of 51 million in 1968. Their wheat production fell from over 81 million to less than 60 million tons. Had these four countries maintained their 1968 wheat area through 1972 some 90 million tons more wheat would have been available in these years.

These events had a number of important effects bearing on the developments of 1972-74:

- They helped to reduce grain stocks substantially before 1972;
- While they were a response to low grain prices, they contributed to even lower prices. These price declines were taking place during a period of inflation and thus the real price of grain to users was especially low. In the U.S. real wheat and corn prices were lower during 1967-71 than at any time since the early 1930's.
- These low prices and the ready availability of food aid encouraged reliance on grain imports.
- With grain prices falling relative to livestock and other feeds, the incentive to feed grain to livestock was especially strong. As you may recall, this was a period of increased denaturing of wheat for feed, and, in the U.S. a period of very rapid increases in grain fed to cattle.
- Sluggish food prices and excess capacity created during 1962-65 resulted in very low fertilizer prices during 1967-71 and to a substantial amount of fertilizer aid. There was little incentive to increase fertilizer capacity during 1967-71 and many plants closed.
- Also, the incentives provided in some developing countries during the late 1960's to stimulate the Green Revolution were eroded away in the early 1970's by inflation.¹⁰

Thus, while there were underlying weaknesses, the world food situation in 1968-71 appeared to be one of abundant supplies, low prices and limited demand for food and fertilizer. While stocks were declining, they still seemed large and burdensome.

1972-74

The impact of 1972's large declines in grain production and another decline in 1974 thus found the world in a very vulnerable position:

- Large imports by the USSR at very low prices in 1972-73, and by the developing countries at higher prices in 1973-74, raised total grain exports to an average of 147 million tons in those two years—36 million tons above the 1971-72 level and 47 million tons above the average of 1966-70.

¹⁰ UN *Assessment*. . . , pp. 4 and 5.

- Grain and then food prices in general, responding to an inelastic demand, soared—wheat from \$60 to over \$200 a ton, rice from \$130 to \$600 a ton between late 1971 and early 1974. But this did not happen in all countries. The major increases were in the exporting countries and international markets. In the EC, the planned economies and some developing countries, internal prices changed very little.
- Grain shortages, high prices, and expanded area fell on a fertilizer industry which had expanded capacity very little since 1967. Unable to increase output rapidly, fertilizer prices also rose sharply from \$50 to \$300 to \$400 a ton between 1971 and 1974
- Food and fertilizer aid shipments, dependent in large part on surpluses, dwindled as grain was drawn out of the U.S., by far the largest supplier of food aid.
- With food and fertilizer now scarce and high priced, and oil also high priced, the burden has fallen on those countries most dependent on imports of all three.

These developments were, of course, further accentuated by the burst of very rapid economic growth throughout the world in 1972 and 1973, and by accelerated inflation.

We are now asking questions and trying to work out emergency solutions that would have seemed inconceivable three years ago, and we are doing so within a very narrow range of options. These are all essentially questions of what to do in conditions of food and fertilizer scarcity.

- Should rich consumers who consume large quantities of grain through livestock make real sacrifices to free grain for direct consumption by poor consumers? If so, how and how much?
- Should farmers able to pay high prices sacrifice some of their fertilizer to poorer farmers in developing countries?

It is not my objective to evaluate these emergency needs and measures. While the need is obvious where people are starving, the facts are obscure. Those who argue that sacrifices could be made are quite correct. There is enough food in the world and it could be shared more equitably in this time of scarcity. But it will be a visible sacrifice, it will cost money and it will need institutions to accomplish the actual transfer of food to those who need it most.

THE FUTURE

But what of the longer run? Need we look forward to a world of food scarcity and high prices? Is what we are living through now a harbinger of the future?

Looking at the past, two elements are striking. The world was able to produce more food per person for the better part of two decades, and government policies were able to significantly alter the level of production upward or downward in a relatively short time. This suggests to me that food production is very responsive to price and other policy adjustments.

Are there sound reasons to think this will not be true in the future? In the ERS assement we did not find this to be the case and I would like to sketch briefly why we did not.

The availability of inputs

- The amount of land presently used to produce food is about half what could be used. Much of this land is in Africa and Latin America. To bring it into production would cost money but that cost is not as great as is often suggested—FAO estimates between \$140 and \$312 per hectare. New land is brought into production all the time.
- Some of the most populous countries, of course, have little new land to bring into production, but their yields are presently very low and could be raised substantially with better methods and additional inputs.
- And land as an input progressively declines in relative significance with improved production methods.
- The present short supply and high price of fertilizer is primarily a function of exceptional demand and the limited capacity of the industry. While higher energy and plant construction costs will result in higher fertilizer prices than during 1967-71, sizable expansion in capacity is underway and prices should fall sharply from their present level.
- The techniques for raising yields also exist or can be developed as the Green Revolution has demonstrated. While there is much talk of its having failed, new technology follows a pretty predictable pattern and this new technology is still in its early stages.

Where will production increases take place?

The fundamental question is where will the production increases come—in the developing countries?

There is major agreement that any fundamental solution to the world food problem will have to come from increased production in the developing countries where increased food supplies are most needed. All projections have concluded that if the trends of the past continue, the developing countries will accumulate progressively larger deficits. By 1985, FAO thinks this deficit would reach 85 million tons compared with 16 million tons in 1969-72. Projections in the ERS assessment indicate grain deficits increasing from 18 million tons in 1970 to from 55 to 72 million tons by 1985. Counterbalancing these deficits are comparable or larger surpluses in the developed countries, *if they continue to produce surpluses*. Thus, if a simple resumption of the trends of the 1960's were to be achieved, the only solution to the imbalance in world food production would be a major transfer of an ever increasing amount of grain from the developed to the developing countries. This is not a feasible or desirable long-run solution.

While a substantial food transfer will undoubtedly be necessary in the coming decade, it is clearly necessary that production in the deficit developing countries needs to be increased sharply. Two observations growing out of the ERS assessment are relevant to this problem:

- The surpluses of the developed countries have been closely linked to higher prices received by their farmers than prevail in international trade, while in many of the deficit developing countries the prices received by farmers are low. They are low relative to

international prices and to the cost of inputs. Nowhere is this more apparent than in the rice growing regions of the developing world where yields are lowest and deficits largest.

—One projection alternative in the ERS assessment demonstrates that to reduce substantially the deficit in the developing countries by 1985 would require the use of from 10 to 15 million tons more fertilizer and associated techniques than would result from presently projected trends of use in these countries.

This suggests that the imbalance in food supply and demand in the world has resulted in part from unbalanced policies and incentives, and in part from the obvious limited resources of the developing countries. A major effort to correct this imbalance in policies and a major effort to provide production oriented assistance to developing countries could go far toward correcting *the* fundamental food problem.

SOME FINAL ISSUES

Will the real cost of food be higher in the future?

Real food prices probably will be higher in the future than they were in the late 1960's because certain food prices, especially grain prices, were depressed during 1967-71, and because important food production inputs, such as fertilizer, will be more expensive. But when food production is increased to overcome recent shortages, food prices can be expected to fall substantially from their present high levels. How low food prices may fall will depend, as it has in the past, on technological improvements in production and on the policies adopted by governments. Nominal food prices will, of course, be higher due to inflation, as will most other prices.

Will food supplies and prices continue to be unstable?

This will depend largely on policies adopted with respect to food stocks. Weather and the inelastic demand for many foods will result in unstable supplies and prices in the absence of stocks. The World Food Conference adopted a resolution to develop a 10 million ton emergency food aid stockpile and other discussions are to take place on the possibilities for developing larger grain stocks to permit greater stability in supplies and prices.

So long as prices act as indicators to producers and consumers, however, sufficient price flexibility is needed to provide the proper signals to both. In the ERS assessment, we found that grain stocks in the area of 60 million tons above operating levels would cover most contingencies. If managed efficiently, the cost of such stocks would be relatively low and would seem a small price to pay for the insurance they would provide.

Does "rising affluence" impose a restricted diet on the poor?

Food consumption patterns throughout the world are determined primarily by income distribution and by the type and quantity of basic foodstuffs produced in each locality.

FAO has estimated that 460 million people are malnourished. To eliminate the worst elements of this malnutrition would require about

25 million tons of grain annually, or less than 2 percent of total world grain production.

When food is scarce and its price high, as it is now, those with higher incomes are able to bid food away from the poor or to bid up the price of food to the poor. This is especially true where so much of the diet of the world's poor depends on cereals. But that dependence is on food grains—wheat and rice. Transferring grain to the poor through foregone meat consumption would be an indirect and inefficient method of helping the hungry.

In the longer run, competition between richer and poorer consumers is only a minor factor accounting for inadequate food consumption. Even in the short-run, to ensure that the desperately malnourished actually received the benefits of foregone consumption by richer consumers would require that the food foregone was purchased and directly supplied to those in need. If this did not happen the effect would simply be to reduce food demand which would benefit the poor only indirectly and then only temporarily.

Are there developments in the world's climate which will limit increases in food production?

The evidence is simply not sufficient to support such a conclusion. About all one can say is that it *could* happen. Analysis of grain yield trends over the past 22 years in many world grain producing areas does not indicate a deteriorating climatic pattern. Nor did the *Ad Hoc Panel on the Present Interglacial* (1974) find the evidence of a major climatic shift convincing.

Is there a need to adjust agricultural policies?

The growing imports of food by developing countries, the sporadic but increasingly large grain imports by the planned economies, the persistence of food surpluses in developed countries, and the declining share of developing countries in world agricultural trade, all point to the need for serious readjustments of agricultural and food policies in many countries. There is much talk about agricultural adjustment, but the possibility of the world having to find a way of transferring 50 to 80 million tons of grain a year within a decade, much of it on concessional terms, takes the subject out of the realm of debate.

It will obviously not be a simple matter to change the longstanding agricultural food and trade policies of the developed, developing and planned economies. The supported prices of the developed countries have grown out of a long history of political accommodation to domestic farm and consumer interests. Those of the planned economies have been central to their developmental philosophy.

For the developing countries, the problem is especially difficult since the implication is that basic farm prices would have to rise somewhat. This would conflict directly with the desire of many developing country governments to keep food prices low for poor, urban consumers. A policy which, as inflation continues, allows food and farm prices to get further out of line. But the rise in farm prices would be relatively small, much less than the present high level. If it is desirable to subsidize prices to some consumers, this can be done without affecting farm prices, and need not be done for all consumers. Since half

or more of the labor force in many developing countries depends on agriculture, the improvement in incomes would be widely distributed.

A far better use of the world's resources could be achieved during the coming decade if the developed, developing and planned economies realized that they had come to depend on a system of food production and distribution which has basic flaws. An abrupt change in this system would be painful and could produce uneconomic efforts to become self-sufficient in food at any cost. But now is the time to begin to make the necessary changes. The developed countries, through food aid and technical assistance, can facilitate this change. The oil producing countries could also assist through financial and fertilizer aid. But this effort would be of little use unless the food deficit developing countries give a consistent priority to food production in their own use of resources.

Surely this would be a more intelligent way to expend our energies and resources in the next decade than to simply consider how to transfer vast amounts of grain.

COMMENTS ON WALTERS' PAPER ON THE WORLD FOOD SITUATION

[By D. C. Kimmel*]

Dr. Walters has made an excellent presentation of the highlights of the very good USDA-ERS study of the World Food Situation which he helped prepare. This is a comprehensive study which has identified the main issues and analyzed them in the professional manner one has become accustomed to find in ERS studies. I would not wish, therefore, to comment on the figures or the analysis which appear to be generally in line with FAO's own work reported in such documents as the earlier Indicative World Plan for Agricultural Development and the more recent "Assessment of the World Food Situation," prepared for the World Food Conference. In any event, the figures are subject to rapid change in today's world, not only from influences within the agricultural sector but perhaps even more so from factors outside.

There are a few issues on which I would like to comment, in some cases merely to reiterate the importance attached by Dr. Walters and, in others, to offer a slightly different interpretation or shade of emphasis. My observations will reflect an attempt to see the issues, perhaps more as the developing countries might see them. I will also be bearing in mind the highly important role of the United States in any solution to the world food problem, in both the immediate and longer term. For it is an inescapable fact that the bulk of the grain to meet the marginal needs of millions of desperately hungry today can only be found in the United States. Equally, the long-run task of gearing the poorer countries up to expand their own production and build up food reserves will call for substantial inputs of U.S. know-how and capital.

Now, to turn to the issues. Can the world feed its population in the immediate future and in the medium term, that is, up to 1985? Both the USDA study and the "Assessment of the World Food Situation" prepared for the World Food Conference, project that on a global basis, supply and demand can match until 1985 but with years of shortages and surpluses around the trend line. The catch phrase is "match on a global basis."

Demand is projected to grow at 3.4 percent per year in the developing world, where about 75 percent of the world's population is concentrated, vs. 1.5 percent in the developed world; but the rate of food production growth projected is 2.6 percent in the developing world and 2.8 percent in the developed world. Thus, the additional hungry people are in one place while the established production capability in

*Director and FAO/UN North American representative.

excess of local needs is in another. This means in the next decade, as Dr. Walters has indicated, substantial food transfers. These transfers can take place and the world can be fed in the immediate future and in the medium term if the United States and Canada, with a modest contribution from Australia and Argentina, are prepared to utilize their production potential and if they, along with other wealthier nations, are prepared to finance provision of food grains to the needy nations whose ability to pay is extremely limited. Even this assumes the logistics problems will be solved; and many doubt that they will be, since by 1985 the shortfall in the developing countries is estimated by FAO, even in normal years, to reach 85 million tons. The USDA study, I note, projects the deficit at 55-72 million tons. Even if the figure turns out to be only 55 million tons, the problem of getting the grain to the people who need it will be a staggering one. As Dr. Walters suggested, such massive transfers are neither a feasible nor desirable long-run solution.

Perhaps it is useful to pause a moment to look in more detail at the food situation in the immediate future, the next 7 or 8 months, in the most desperately hungry countries. This is one of those "off trend line" production situations; and we all hope the upward trend will be resumed. Most of you will know that representatives of major grain exporting and importing nations met in Rome on November 29 to consider how the needs of the countries most seriously affected by the current crisis could be met. Conclusions reached were that the unfulfilled requirement for food grains between now and next July appeared to be about 7.5 million tons, valued at about 1.75 billion dollars, but that supplies were available somewhere in the world to meet the requirements. Where these supplies were located was not indicated; and who would finance their purchase and movement to needy countries was not agreed upon. Incidentally, 7.5 million tons represents 1 year's food supply for about 40 million people at the poorer countries' 400 pounds per capita standard.

The ups and downs of production around the trend line have important medium and long term implications. Even if wealthier countries are willing to produce and pay, depleted world stocks will have to be rebuilt to a yet-to-be agreed upon "safe level" to ensure physical availability of supplies in years of low yields due to adverse weather or other factors. In this connection, Dr. Walters has referred to the World Food Conference resolution calling for a minimum of 10 million tons of food aid per year and to other discussions on developing larger grain stocks to permit greater stability in supplies and prices. The resolution on food aid is a welcome one for the developing world, for the lack of assurance of both a minimum level and continuity has created, and is now creating, extreme difficulties for the poorer countries.

Perhaps the most significant "other discussions" taking place at the moment are those on the FAO-sponsored Undertaking on World Food Security which provides for, among other things including a better information system, a system of nationally held reserves, coordinated and operated under internationally agreed rules and procedures. The recently concluded session of the FAO Council has adopted this Undertaking and it is now being transmitted to FAO Member

Governments inviting them to signify readiness to adopt the objectives, policies, and guidelines outlined. Governments not members of FAO are also being invited to participate in implementing the Undertaking. The replies of governments will be considered at an *ad hoc* governmental consultation scheduled for May 1975. The world food security system, if successfully designed and implemented, will not only help ensure availability of food for the world's hungry, but it can also play an important role in ensuring a continuing market at acceptable prices for the output of North American farmers. While the technical and political difficulties of designing and implementing the system are not to be underestimated, the time to get on with the job is now. An acceptable degree of stability in food supplies and food prices is desperately needed in the world of today and tomorrow.

FAO and the World Food Conference fully endorse Dr. Walters' conclusion that any fundamental solution to the world food problem will have to come from increased production in the developing countries. Dr. Walters suggests, in this connection, that the availability of inputs does not appear to be an impediment to future increases in production. He notes that much more land is available and can be brought into production with adequate investment. The fertilizer price and supply situation can improve although it will be a problem for a couple of more years until new plants now on the drawing board or under construction, are in operation. Similarly, the problems of improved seeds, pesticides, irrigation, facilities, and appropriate technology, etc., can be resolved and yields can be increased. With this kind of analysis I agree, but rather than saying availability of inputs *does not appear to be* a problem, I would prefer to say "*need not be*" a problem. Physical availability at a world or even national level may be assured but a difficult problem is how to make these inputs accessible to the millions of poor and small farmers of the developing world who must be brought into the production stream. Will the governments of the developing world be willing and able to make the policy decisions and investments required for this purpose?

Are they prepared to orient their credit, supply, marketing, education, research and extension institutions to make it possible for the small and resource-poor farmers to produce? This is a highly important point, for bringing these under-privileged into the modern production stream both expands production and contributes to improved income distribution. But it is also part of the broader issue of attaching sufficiently high priority to agricultural and rural development, a necessary condition for the long-run resolution of the world food problem within the context of overall economic and social development.

Let us look also at another aspect of ensuring physical availability of inputs and that is the matter of financing. The Secretariat for the World Food Conference estimated that assistance to the developing world for agricultural development should rise from the present level of \$1.5 to \$5 million per year. This is the level of external resources required to supplement national investment in constructing fertilizer plants or importing fertilizer, for land development, for improving or constructing irrigation systems, for building processing and storage facilities, etc. Whether the wealthier countries of the world are prepared to provide assistance at this level is still very much a question.

Nevertheless, this appears to be an essential complement to appropriate policies in the developing countries for the long-run solution of the food problem.

A point emphasized by Dr. Walters is that farmers in the developing world have lacked the price incentive to produce. Undoubtedly, this has often been the case. It is clear, however, that price incentives in the absence of the possibility to produce, provided by the appropriate institutional arrangements I have just suggested, cannot bring about expanded production by the smallest and poorest farmers, most of whom consume with their families all they now produce.

Dr. Walters' analysis suggests that the factors which caused the present world food situation are largely transitory and can be corrected by appropriate policies. The incidence of unfavorable climatic conditions in so many places at the same time may well be transitory. Appropriate policies could indeed be helpful in preventing the recurrence of other elements in the current situation. One can but hope that the political will exists, worldwide, to adopt such policies in respect of population, world food security, priority for agricultural and rural development in the developing countries, and expanded technical and financial assistance from the more fortunate nations. Unless such political will exists, or can be created rapidly, the future of the world is not bright.