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WORLD FOOD—LOOKING BEYOND THE CRISIS

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An exhibit at the Smithsonian Institution in Washington explores America's drive for productivity. The pitfalls as well as the benefits of productivity are emphasized in this walk-through, multi-media design. In several places, this legend is posted: "If we're so good, why aren't we better?"

The creator of that exhibit was treating a broad spectrum of American effort. But, that recurring message, *if so good, why not better*, is not lost on those dealing with public policy aspects of the world food problem. Today, we are being called to account for the recently unusual domestic as well as world food market—for short supplies and high prices.

Agriculture in the developed countries—if it is so good, why do we have to pay such high prices for our food now?

The green revolution in the developing world—if it is so good, why are developing nations like India still coming up so short on food supplies?

If modern agriculture is so good, why isn't it better?

Clearly, currently tight world food supplies and high prices have renewed controversy over trade and aid policies. Conflicts arise between agricultural trade designs of the major economic powers and their aid responsibilities. The issue builds over how to assure a growing and steady food supply for the have-not nations.

Putting these issues into proper perspective requires more than a cursory look at short-run phenomena such as the latest price of soybeans or crop shortfalls in the Soviet Union. Too often, the short-term world food situation is confused with the long-term, the past with the present, or facts with speculation. My discussion of the world food situation will center around four obvious, but distinct, time frames—the long-term past, the immediate past, the immediate future, and the long-term future.

LONG-TERM PAST

The world's long-term record reflects a very stable and rising

trend in total food production. And, despite the population explosion, per capita food production has risen.

Since 1954, per capita food production in developed regions has increased about 1.5 percent annually. The less developed regions—except for Africa—experienced a much slower, yet positive, change in food production—about 0.5 percent a year. Although both regions had about the same percentage increase in total production, the greater increase in population cut the per capita rate of gain in the less developed world.

But, our statistics on changes in food output tell only part of the story. Poverty, poor food distribution, eating habits, and many other special circumstances mean that large groups of people in the less developed world, as well as the developed world, have been poorly nourished.

Despite this, the world is improving its food supply. That is one basic fact underpinning our later discussion of more recent, albeit unhappier, events. Another basic fact in the food situation is that the world as a whole—not just the United States, Japan, or Europe—is becoming more affluent.

Again, just as there are food supply trouble spots, there are economic problems as well. But, both developed and less developed nations have achieved per capita economic growth of at least 3 to 4 percent a year. The U.S. per capita gross national product has increased 40 percent since 1960. Japan's has tripled. South Korea's has doubled.

We are talking about buying power, and that buying power has triggered a protein revolution. People with more money buy more animal protein—milk, eggs, and meat. This is a far more expensive diet than one based on cereals. American consumption of animal products alone requires that we indirectly use four times more cereal per person than many people in the less developed world consume directly as their basic diet.

So, as incomes have accelerated over the past decade or two, greater stress has been placed on the world's cereal supplies. This forms the backdrop for the confusing agricultural events of the past two years.

IMMEDIATE PAST

Today's shortages of beef in the supermarkets, \$5 wheat, soybeans that exceeded \$12 on the Chicago futures, U.S. 1973 food prices likely to average 20 percent above 1972 levels, U.S. per capita food consumption down for the first time since 1965—these

are extraordinary events for the U.S. food industry. They are the result of an equally extraordinary combination of international circumstances involving changes in currency values, short grain crops, and massive purchases on the world grain market.

These worldwide conditions have helped push the value of U.S. agricultural exports up from \$8.1 billion in fiscal year (FY) 1972 to \$12.9 billion in FY 1973. The acceleration of U.S. farm exports has contributed solidly to a turnaround in our balance of payments (BOP) position. Just recently, we learned that the United States posted a \$463 million surplus in its BOP position in the fourth quarter of FY 1973 when measured by the number of dollars held by foreign central banks. This is a change from a \$10.5 billion deficit in the prior quarter. When measured by the number of dollars held by foreign commercial banks as well as central banks, we had a deficit, but it was considerably smaller than the deficit we had on this basis in the last quarter. FY 1974 farm export levels are expected to expand significantly, although controversy is building over the question of export controls.

Devaluation

One of the important factors affecting the U.S. food situation has been the devaluation of the dollar. In the last two years, the dollar has been devalued by about 12.8 percent. This change was brought about by two formal currency realignments and a downward float by the dollar since March of this year.

The effect of this devaluation has been a lowering of the price of U.S. exports in terms of foreign currencies or, if you will, foreign nations have been given some discount coupons for shopping in the United States.

The 12.8 percent devaluation is just an average. The dollar has devalued relative to the Japanese yen, for instance, by some 27 percent in the last two years. Significantly, Japan is the single largest importer of U.S. farm goods (\$1.4 billion last year, maybe \$2 billion this year) and has found the devaluations to be to its advantage in U.S. purchases. Relative to the German mark, the dollar has devalued by 33 percent. The dollar has also devalued by 19 percent relative to the French franc, and 20 percent relative to the Dutch guilder.

The overall effect of the U.S. dollar devaluations as well as tight world grain stocks and short crops has been a build-up in foreign demand for U.S. agricultural products, mainly soybeans and feed grains.

Short Crops

The impact of devaluation on current food demand and prices, while significant, has been far overshadowed by an overwhelming shortfall in food production in large areas of the world. Total and per capita food production declined in both developed regions (North America, Europe, USSR, Japan, Republic of South Africa, Australia, and New Zealand) and less developed regions in 1972 (Figure 1). Each of the four major less developed regions (South Asia; East Asia, excluding Japan and Communist Asia; Latin

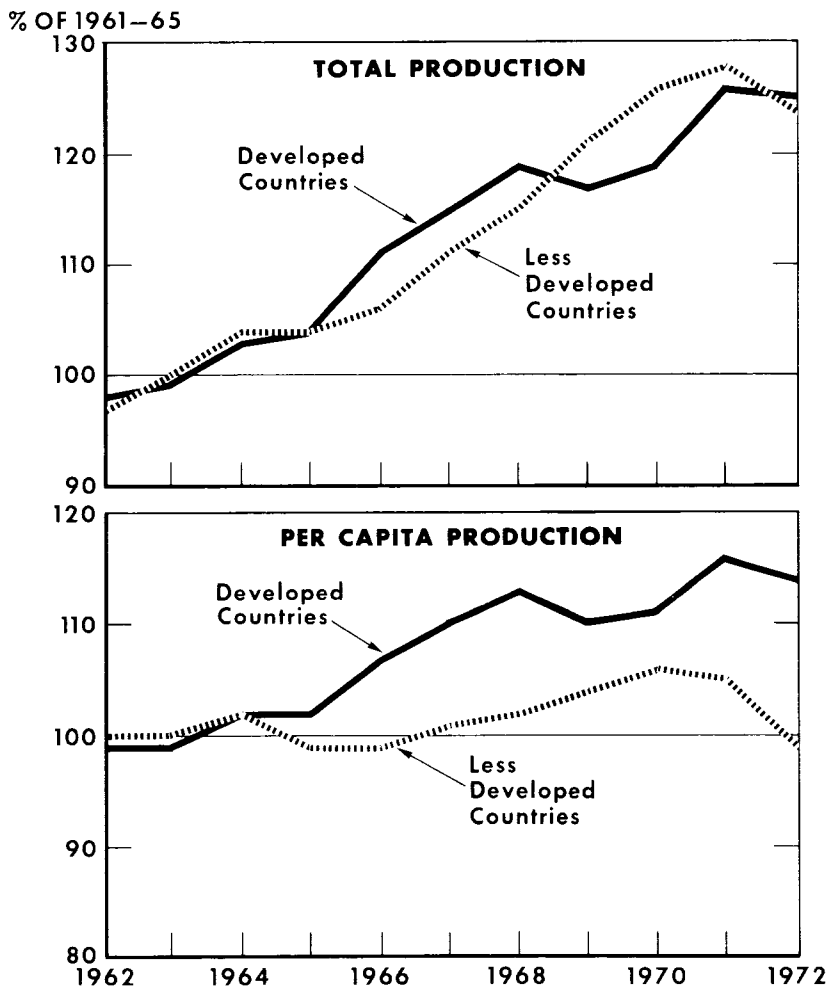


FIGURE 1. Indices of food production in the developed and less developed countries. (Source: Economic Research Service, U.S. Department of Agriculture.)

America; and Africa, excluding the Republic of South Africa) experienced severe declines in per capita production.

Specifically in 1972: Winter-kill and then a dry summer cut the Soviet grain crop. Drought crippled grain production in Argentina and Australia. A below-normal monsoon dashed India's grain crop expectations. Drought and typhoons slashed the Philippine rice and corn crops. The U.S. corn and soybean harvest was stalled by wet field conditions. Peru's anchovy catch failed, thus cutting high protein fishmeal production. The African Sahel nations of Mauritania, Mali, Chad, Senegal, Upper Volta, and Niger suffered their fifth consecutive year of severe drought. The Southeast Asian rice crop fell victim to bad weather. These events, in combination, placed an unusually critical strain on world grain supplies.

Soviet Purchases

After the severe shortfall in their grain crop, the Soviets came to the world market for almost 28 million tons of cereals, about 18 million of them from the United States. These grain purchases from the United States totaled \$802 million for those grains delivered in FY 1973 (\$147 million in FY 1972). Not all of the USSR's total cereal purchases have yet been shipped. Some, like the wheat purchased from Canada, was redirected to other centrally planned nations. The Soviets imported only about 20 million tons last year.

What made the Soviet purchases so surprising was that they represented a major reversal in Soviet food supply policy. Traditionally, the Soviets have reacted to short supplies by simply tightening their belts and waiting out the shortage. A normal adjustment for them, among others, has been large livestock slaughter. Even though they did import wheat in 1963 and 1965, the Soviets still slaughtered large numbers of livestock. But not in 1972; instead they wielded their purchasing power quite forcefully in what might have been a domestic political decision to maintain diets and expand livestock numbers in the face of domestic shortages.

The Soviet purchases, combined with the opening of trade with the People's Republic of China (\$207 million in FY 1973) and trade expansion with Eastern Europe, pushed our total farm sales to communist countries in FY 1973 to around \$1.5 billion, a fivefold increase over FY 1972.

Overall Exports

While the Soviet purchases have received the lion's share of attention, they by no means accounted for the greater portion of

our higher export levels last year. Our overall farm export value jumped 60 percent; 40 percent of this was due to higher prices. But, the USSR accounted for only 16 percent of that increase compared to 30 percent for Western Europe and 22 percent for Japan.

The net result of the short crops and expanded trade with Europe, Japan, China, and the USSR was a tremendous surge in world grain exports in 1972—a one-fifth increase of about 24 million tons. Since 1972 production was short, this accelerated import demand had to be met through stock draw-downs. We, alone, increased our grain exports by 30 million tons, or 6 million more than the worldwide increase in exports. We, therefore, not only covered the total jump in exports but also the large shortfalls experienced by other exporting nations.

So, that was the year that was.

The world grain market became very much the province of the wealthy nations who could afford the prices.

The less developed nations like India, with severe foreign exchange limitations, needed more grain and had to pay much more for it. Moreover, despite the solid technological advances of the green revolution, the weather once again showed its ability to overwhelm the yield potential of new technology and improved management. Famine, last feared on a major scale in India during the mid-1960's, is threatening anew in Africa.

The United States ended the fiscal year with the lowest stock of grain since 1952. A controversy on export controls, to protect against anticipated high demand for our short supplies, was born. Controls were, in fact, placed on soybeans.

Long-term growth in world affluence, currency realignment, poor crops, and unusual world grain purchases have shaved grain stocks and generated high prices throughout the world.

Foremost in our minds now is the question: Will the year that was continue into the year that will be?

IMMEDIATE FUTURE

The immediate future will be shaped mainly by the weather, but devaluation will remain a factor.

Supplies

In general, crops in the United States and around the world look bigger this year. With the relatively low carryover in U.S.

wheat, corn, and soybean stocks, we have been focusing our attention a bit more keenly on the USDA monthly crop report. The September issue noted a 4 percent boost in corn production over last year; increased soybean acreage with record high production, some 25 percent above last year; and wheat production 12 percent above a year ago. Despite this and due to expected continued strong demand, supplies will still be tight (with lower than normal stocks) and prices will stay high.

For the rest of the world, production prospects also look better, although the situation in many less developed regions still looks bad, mainly because of weather.

Weather conditions have improved in the Soviet Union and the 1973 Soviet wheat crop will probably register between last year's poor crop and the 1970 and 1971 bumper crops. Feed grains, too, look good. It appears as if the Soviets will be able to meet domestic needs from their own production and from the imports being received. Also, they will likely be able to partially rebuild stocks. Best estimates show that the Soviet Union will only import about half as much grain in FY 1974 as in FY 1973.

China's wheat prospects, bolstered by expanded winter wheat plantings, look generally favorable.

The Australian drought has broken and feed grain production will likely be up.

Argentina's wheat production will likely be depressed by excessive rain which occurred at planting time.

India's grain situation is less certain. Their 1973 wheat crop harvested in March and April matched last year's record. But, the drought had enough impact on rice and coarse grains to depress total grain production for the year ending April 1. While the monsoon looks good, heavy flooding has recently destroyed large portions of the fall harvest. Weather, again, is very much a factor for India as well as Pakistan, also severely damaged by recent flooding. Prices on the world market will influence very critically India's import designs.

There have been rains in Africa's Sahel, but the situation remains grave. Livestock losses have been particularly severe, something like 80 percent in Chad and Mauritania and an almost completely devastating 95 percent in Mali, according to news accounts.

Weather is still very much the question throughout Southeast

Asia, where the rice crop was cut severely by last year's poor monsoon.

Larger feed grain and wheat acreages point to expanded Canadian production.

Overall, USDA looks for world grain production to increase over 50 million tons this year. Any price optimism over this, however, has to be balanced against a continuing high demand as well as reduced stocks. Even with the production advance, world stocks of food grains and feed grains at the end of 1973-74 may be below last year's levels.

Devaluation

The dollar devaluation will soften the impact of high U.S. prices in some foreign markets. For example, the fact that the yen appreciated 27 percent against the dollar means that the Japanese government can get a 27 percent discount on our wheat prices. So, despite the high and rising U.S. price levels of such commodities as wheat and soybeans, they will likely remain a relatively attractive buy in some foreign markets.

The effect of devaluation has been to lower the price of U.S. farm exports in terms of some foreign currencies. Forty-seven nations devalued with the United States, and prices for U.S. commodities did not change in these nations. About a third of our exports go to such nations. However, about 64 percent of our exports go to the 62 nations that permitted the dollar to devalue. Discounting the effects of P.L. 480 exports and the 33 percent of our exports hampered by nontariff barriers, we find that about a net 43 percent of our exports go to nations that are free to benefit from dollar devaluation. Such savings could be passed on to foreign consumers and could possibly generate higher demand for our exports.

Devaluation even stimulates farm exports to countries where imports are controlled by state trading agencies, as in Japan and India. Although the savings may not be passed on to the ultimate consumer, they nonetheless affect the costs seen by the finance minister and the import monopolies. They can recognize a bargain as well as the next fellow. Thus, the impact of devaluation can be quite extensive. The pull of foreign markets for our grain will be strengthened by the devaluations and will contribute to a tightening U.S. supply situation.

On balance, for the immediate future, it appears that, despite generally favorable crop prospects in the more developed regions,

grain supplies will remain tight. Demand, generated by the affluent importers and the food-short nations, will remain high on the world market, especially for feed grains and oilseeds. Currency realignments will add to that demand, and will serve to keep U.S. supplies of grain tight. And prices will remain high.

LONG-TERM FUTURE

At least three sets of conditions contribute to the fantastically high level of U.S. exports.

One set involves the steady growth in worldwide demand for feed grains and other feeds as various nations build up their livestock economies. The United States is clearly in the driver's seat in satisfying this demand, which will contribute solidly to our long-term growth in exports.

The second set is dollar devaluation. Little is known about the time gap between devaluation and the desired effects of this action on a nation's exports. Some economists say it happens rather quickly and some say it may take five years. Whatever the interval, the devaluation is expected to exert an upward push on our exports for the next few years. At some point, its influence will cease. Thus, devaluation leads not to a bubble on the trend of our exports as bad weather does, nor to a year-after-year increase as rising income does, but to a once and for all upward shift in the level of exports.

The third set is characterized by recent crop shortfalls which have contributed to a sizable bubble on top of the steadily up-trending exports. This bubble will likely dissipate over the next year or two if weather improves and as production around the world responds to the currently high prices.

There are two ERS projections of total U.S. exports to 1985. Both projections assume long-term, steady growth in world demand for livestock feeds. A moderate projection, showing export volumes rising 46 percent above 1970 levels (or 7 percent above currently high levels), is based on the assumption that importing countries will pursue self-sufficiency policies, and high prices will constrain import demand in these countries.

A higher projection to 1985 of a 70 percent increase in volume above 1970 (or 25 percent above FY 1973) assumes that encouragement of animal production in importing countries will result in a high demand for feed grains and high-protein meal. This reflects a strong, steady growth in our exports, but without the current

bubble blown out of proportion by the recent extraordinary conditions of the world market.

Alternative 1, or the lower projection, reflects a relatively moderate growth in U.S. exports of feed grains, even though consumer incomes will continue to grow and contribute to a demand for livestock products and the grain to produce them. The moderate level is due to several projected factors: The European Community would approach self-sufficiency in meat and grains. Eastern Europe and the USSR would be close to self-sufficiency, even though they are now substantial importers of feed grains. The developing nations would demand only moderate amounts of grain.

In contrast, in spite of continued high prices, grain import demand for Japan is expected to rise nearly threefold, to 28 million metric tons from 10 million in 1970. Taiwan and Korea, both rapidly expanding economies, would also demand substantial amounts of grain.

With moderate growth in import demand, growth in world grain production could exceed the growth in demand unless major suppliers, including the United States, continue to produce at less than capacity at projected prices.

Alternative 2, or the higher projection, would occur if: The European Community sets lower targets for production (the high cost of the high targets may become politically infeasible). The USSR and Eastern Europe follow a policy to increase livestock consumption at a faster rate of growth than projected under *Alternative 1*. The People's Republic of China becomes more trade oriented and imports more grain to improve city diets.

Of course, imports by the USSR and the People's Republic of China will depend largely on political decisions or crop shortfalls. They will do all they can to stimulate their own grain production.

Larger demands for coarse grains would also be expected if petroleum-producing regions of Latin America and West Asia decide to produce or import more animal products in order to upgrade their diets. Interestingly, an ERS team in Iran is helping that nation to develop its livestock economy. Iran is footing the bill of this development team.

Under the higher projection, U.S. exports of feed grains could increase to 56 million tons, or 25 million tons higher than under the low projection. Likewise, soybean exports could increase to 1.1 billion bushels, 175 million above the levels of *Alternative 1*.

Overall, the 1985 projections indicate the outlook is fair for wheat exporters and good for coarse grain exporters. The difference is due largely to the rising demand for livestock products, especially in the developed and central plan countries.

The developed and central plan countries will continue to be the major producers and consumers of both wheat and coarse grains. The developed countries will continue to supply the developing world with grain. However, the developed importers will import more coarse grain while the developing countries will import more wheat. This reflects growing livestock economies in the developed world as well as the developing world's preference to save scarce foreign exchange for needed food imports.

ISSUES

Earlier, the question, *if good, why not better*, was posed concerning two areas, agriculture in the developed world and the green revolution in the developing world.

The question on agriculture in developed nations has already been at least partially answered. The big culprit is weather. We have surrounded ourselves with a panoply of technology which lulled us into a false sense of security. But, as we have learned from the margarine commercial, it's not nice to fool Mother Nature. She has seen her revenge and we will be more conscious of her presence hereafter.

The question involving the less developed countries centers on two facets, their green revolution and the responsibility of the developed nations to help improve the food supply in the poor areas. Most especially, in times of food emergencies and high prices, like now, what responsibility do the major economic powers, such as the United States and the USSR, have to the less developed world?

I am annoyed by critics who say that the recent events have proved the green revolution has failed. Many say that technology which is the backbone of the green revolution is making us worse off by accelerating imbalances in our economic structure, our social patterns, and our relationships to nature.

The fact is that the technology of the green revolution has established a solid base for agricultural improvement in the less developed nations. There are many problems, to be sure, such as disease, inadequate water control, social inequity, and many others. But, instead of backing off in the face of these problems,

new efforts should be mounted to solve them. It will take assistance from the developed world.

But, at the same time, interest in foreign aid seems to be waning, especially in the United States, where our AID program rocks along from congressional continuing resolution to continuing resolution. The current funding level for U.S. economic aid stands at just \$1.3 billion compared with \$2.6 billion in 1961. The amount of economic aid from the world's 16 major donors was down 3 percent in 1972.

Just as critical is the way developed nations treat the less developed in the world markets. Importing nations, including the less developed, have taken it for granted that the United States would always have enough grain stocks to fill in their production gaps. But recently we have moved toward a policy of minimum stocks by adjusting production to anticipated consumption, with less regard for shortfalls.

Thus, the United States is no longer a residual supplier, and unanticipated demands, such as from the USSR, can cause havoc with prices. Under such conditions, to what extent will countries such as the United States and the Soviet Union, as they deal in the world market, take into account the needs of the poor nations such as Bangladesh, India, and those of Sub-Sahara Africa?

Today, we see a sharp decline in concessional food aid sales under Title I of P.L. 480, from \$743 million in FY 1972 to \$610 million in FY 1973. Because of a reduced budget, the expected FY 1974 level will drop still further. In terms of actual commodities, this expected food aid level will be even lower since grain prices have almost doubled. And, at least one traditional food aid commodity—nonfat dry milk—will not likely be shipped at all since the United States recently shifted from a net exporter to a net importer of that commodity. Moreover, procurement for Title II donated commodities was recently suspended for at least two months. The reason is our uncertainty over U.S. food supplies.

If the low-income nations cannot obtain food aid, they will be at the mercy of prevailing prices on the world market and, in times of shortages, they will not be able to afford to buy.

The short grain supplies and massive purchases by the wealthy nations drove prices rapidly upward last year and frustrated the import plans of the developing nations like India. One of the problems is the difficulty of anticipating Soviet intentions and adjusting production accordingly. Japan, too, is a large customer; but, with

a relatively open system of trading, we are able to anticipate its needs. Information about Soviet crop conditions, government budgets, political directions, and consumer prices is very limited. The recent U.S.-USSR agreement for information exchanges on crop conditions and other agricultural matters may be useful, but much will likely remain unknown.

The Food and Agriculture Organization of the United Nations recently proposed a world-sponsored system of "minimum world food security" to protect the developing nations against low world stocks and high prices. FAO notes that, "Current national policies for basic stocks were not designed to cope with the present situation. Stocks are costly and governments and commercial interests have to weigh the financial burdens of stockholding against the risks of a short fall in supplies." The FAO proposal involves an international cooperative effort to maintain emergency stocks of foods.

The FAO Director-General has called an emergency meeting of the major wheat exporters to urge them to "ensure that vulnerable developing countries are able to obtain . . . their minimum essential imports for human consumption to avoid acute hardship, serious social and political instability and possible starvation later in the season."

Whatever the outcome of FAO's plans, it is sure that, unless the nations accept responsibility for maintaining contingency stocks, we can expect a continuation of a dangerous supply-demand balance in the years to come. The bulk of the world's grain crop is grown in the developed nations, most especially in the North American continent. A severe shortfall in production in these areas would likely cause dangerously volatile prices all over the world. And little could be done to combat famine in the less developed nations when, if, and where it occurs.

We have not resolved our question about aid and responsibility to developing nations. But the current shock of food prices, generated by short supplies and the domination of the world market by wealthy nations, should open our eyes to their needs. These needs have been there a long time but are cruelly brought into sharper focus in times of food stress.