

WORLD FOOD CRISIS

The reason for a presentation on the world food crisis is that this issue is facing every person in the world today. Talk about the world food situation has been continuing since Malthus introduced the subject about a century ago. Today we are faced with the possibility of massive famine. I have more than a passing interest in this subject since I work as a research manager for a farm equipment company and therefore watch the agricultural industry to forecast what is going to happen to our products within that industry.

The very complexity of my topic freezes me to the point where I do not know where to begin. I have prepared four different outlines for this talk, but I will try to confine myself to just one. Everyone here is probably knowledgeable enough to scorn as simplistic most newspaper accounts dealing with the world food situation. Perhaps you respond cynically when you read a little story on hunger somewhere around the globe. Underneath those responses is a wellspring of guilt. I know that I am rather sensitive to casual comments about my waistline. That is easy to understand. I suppose the reason that this talk is so difficult to do is the dread of the prayer that this kind of talk turns out to be. There is hardly any way to deal seriously with the world without coming up with some sort of proposal. I do not see any way of talking seriously about the food crisis except to talk about some of the real possibilities of dealing with it.

It was helpful to me a few weeks ago to hear someone say that fear is a motivating force in our lives. I always thought that fear was bad, that one should not get hooked on that sort of stuff. Then it occurred to me that, similar to fear, hunger is a motivating force in man's life. This realization helped me to prepare this talk, for there is no hunger crisis. There may be famine or impending famine in our time, but hunger is just a basic human drive which motivates man to get off his duff and do something. That is what man needs to do in order to save his own life, and insure the continuity of civilization.

Famine, on the other hand, is the situation where the possibilities of relieving man's hunger are cut off. That might be a way to talk about famine in our time. The Bible refers to famine a number of times for the period of seven years. Today, famine is looming on the horizon as the irreversible fate of a third of the world's population. They can only be saved by radical changes that are not being implemented today. This famine is not being brought about by plagues, frogs, or floods, or any of the things one is accustomed to reading about in the newspaper. Success is the cause of famine today. In particular, famine is being brought about by economic success. It is the prosperity of the western world and of the world-wide middle class that is bringing on famine across the globe, and it is prosperity which is responsible for the starvation of masses of people. It is this situation I want to talk about.

I have four points which I would like to discuss: the situation, the challenge, the model and the task. The bulk of the talk is on the situation, for it is an unbelievably complex one, and involves unbelievably complex economic forces which have broken loose in our time.

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Without exception, the gross national product, the general economic output, of every nation has grown in the last five years. This is a radical statement to make. This is what I mean by economic success in our time. The world is going through a period of massive prosperity. This is real prosperity and not inflationary prosperity. Prosperity shows up everywhere, even in the poorest countries, as an expanded middle and upper class, and in a few countries it shows up in the improved general welfare of all the people.

Prosperity has been going on in the world for some time, and that has broken loose massive forces in the economy. The best example I know for that is the Greek peasant. Greece has been a very poor society, and until three or four years ago, a Greek peasant ate meat only on feast days. It was a rare occasion for them to eat meat, and then it was usually a small piece of lamb. Now prosperity has come to Greece, relative prosperity, you understand, for Greece is still a greatly impoverished nation. Today, it is not uncommon for a peasant family to eat meat on Sunday, and feast days have become more frequent.

As soon as a family makes just a little bit more money, their food budget is the first thing to expand. The family eats better. Sociologists have known for a long time that immigrating people, once they get settled, expand their diets. That has happened all across the globe. Consequently, the people that were eating grain a few years ago are eating more meat now. In the U.S. this year, we consumed 263 pounds of meat per man, woman and child. Just five years ago, we ate only 122 pounds of meat per person. This is a massive increase in meat consumption. It takes four to seven times as much grain to produce meat as to eat the grain directly. That is, the grain eaters of the world live on 400 pounds of grain per year, and the meat eaters live on 2000 pounds of grain per year. This is a real statistic, not a trumped up figure. It takes 2000 pounds of grain to support your meat-eating habit. Five people could live off that grain, if you ate it directly instead of in the form of meat. This is what prosperity has done. It has just soaked up the food supply, most concretely in the form of feeding grain to livestock.

In order to illustrate how this happens I pulled together some figures which are not real but will illustrate how this happens. Say that the average income in the U.S. is \$8,000. Suppose that over the next five years we have a 2% growth rate, which is half of what it has been over the past five years. This is real growth, excluding inflation. In five years the average income in the U.S. would be \$8,800. Now in comparison, suppose that a developing nation has an average income of \$600. This is quite high. It is about \$120 in India, and about \$100 in Africa. Now, if you take the highest growth rate in the world, which is 15% in Japan, and spread it out over the next five years, the developing nation's average income would increase from \$600 to \$1040. You discover that the gap between the two economies, that of the U.S., and the developing nation, has actually increased from \$7400 to \$7760, even with an abnormally slow growth rate for the U.S. economy and an abnormally high growth rate for the developing nation over the five-year period.

	Five Year Income Illustration		
U.S. Income	\$8,000	2% growth	\$8,800
Developing Nation's Income	\$ 600	15% growth	<u>\$1,040</u>
The Gap	\$7,400	Increasing	<u>\$7,760</u>

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This has been going on for a decade. The gaps are growing wider. In a time of prosperity, that extra \$700 sucks up all the extra food in the world. That increase in money buys more meat. The Japanese, for example, are paying \$10.00 a pound for steak. This is a real breakloose in style for them. This kind of meat buying uses up the grain of the world. It is the single most powerful economic force that has broken loose in the world over the last five years, and it has now begun to take its toll. Floods and natural catastrophes are the way life is. What I am talking about is not the way life is, but a trend, a radical shift that has happened to us in recent times.

I want to look for a moment at the percentage of income spent on food around the world. I heard someone recently state that the percentage of income spent on the food in the US has risen to 35%. I wanted to say that was union propaganda. Actually, in 1952, we spent 23% of our take home income on food. This includes restaurant food and all food expenses. The expense of food dropped to 16% of net income in 1972. We actually spent less of our net income on food while we increased our restaurant eating and attained a better standard of living. That is a devastating fact in relation to the rest of the world. Inflation in the U.S. caused a rise in food expense in 1974, to 19% of net income. England spent 25%. France, Germany and Sweden spent 35% of net income on food. Poland, 45%. Greece spent 50% and in India it was 80%. This is what has happened around the world.

The leverage in the market place is free dollars. If an American wants to go out and spend \$30 for dinner, he does. The restaurant buys a steak for \$10. The farmer goes out and grows another steer, which consumes a lot of grain. This is simplistic, to be sure, but that is exactly what has been happening. Japan spends 50% of its net income on food. That is quite surprising, is it not? This illustrates a shift in style. The Japanese are spending a great deal of money on food, especially meat. They are going right ahead and paying the high prices. The category I am discussing is that of people deciding to buy food, often very expensive food, when they have the money. Much more time could be devoted to this, but hopefully the point is clear: the prosperity of the world is soaking up the world food supply and has, in fact, endangered the future of about nine hundred million people in thirty two nations.

At the same time, we live in a strange time of scarcity. About a year ago there was a shortage of toilet paper. Everyone went out and bought all there was on the shelves. That was scare buying. Then there was a scarcity of oil. Now there is an oil surplus. Libya is producing only 17% of its rated output. Iran is down to 81%. There is a lot more oil to pump than is being pumped right now. This sort of short term scarcity flashes through the economy around the globe. There was no shortage of sugar in this world. It was some sort of flash that went through the economy and cannot be traced down. There was no short-term shortage of oil: it was a sudden shift in policies that the globe over-reacted to. When money is thrown into those scarcity situations, it disrupts the pattern even more. The dynamic of prosperity creates famine in a scarcity situation. High income wins every time so long as we are operating in a market economy. High income will always have flexibility. It will always have the ability to survive in a market economy and outbid those that live at the subsistence level.

The price of wheat more than doubled last year. Can you imagine what that does to a family living on \$120 cash income a year, where basic grains are their

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staple food? Where is their flexibility to shift when the impact of that massive economic force hits? This is the reality within developing nations today. It appears now that this is an escalating situation. As the years go on, and possibly in the very near future, subsistence economics will not be able to operate at all in a free cash market.

I have been using a lot of statistics, but my real point is that statistics are irrelevant. It does not really matter what numbers we use. The forces of prosperity are moving, the income gaps are there and they are getting wider, and that is the world we have on our hands. It is time for us to move beyond the statistics and look at the human issues. That is what I would like to do now.

Technology has been seen as the savior in the food situation, but there is another side to the use of technology in agriculture. Technology has had a massive impact on US agriculture. Because of technological input on our farms, there are high yields of wheat, rice, soybean and corn. This same technology has had a massive impact around the world. In fact, a green revolution is occurring around the world with rice and wheat, and particularly with a massive increase in rice yields. At the same time, technology has made those same economies dependent upon technological inputs such as fertilizer, water and chemicals, for these kinds of inputs are a necessity of our advanced agricultural technology. In addition, it turns out that the new technology requires relatively high levels of expertise to apply it. This means that the grassroots cannot adapt these techniques to use as their own wisdom, in their situations, with the resources they have available. Thus, they become dependent on imported fertilizer, imported chemicals and distant experts. Fertilizer has doubled and tripled in price during the last year. In that situation, what happens to the green revolution is that it goes under due to a lack of the inputs the technology requires. This creates a strange reversal.

I was deeply impacted while on the Global Odyssey with the incredible terraces in the developing nations. The terraces I particularly remember are around Katmandu in Nepal. You have seen pictures of them. I was impressed with the incredible length of history invested in them. What intensive agriculture is going on there. Then I read an article which pointed out that this is not intensive agriculture, but extensive agriculture. They have covered every square foot of the countryside with farmland. But then, what do they do with it? They give the land minimal care, and use the same methods used five hundred years ago. In some cases, they till the land with a wooden stick.

When we looked at those paddies carefully in Nepal, I remember now that there were blank rows. I reasoned that rice is a very different culture to grow. To be sure, it is difficult, but there cannot be blank rows in a field if there are going to be high yields. If there is a blank row, then they must go back and plant another row. In the meantime, the labor is lying around. There is a low level of engagement. The labor is sitting there and the fields are poorly tilled. In fact, the yields are lower in the developing nations than in the developed nations, using the same amount of fertilizer.

Throughout the developing nations agriculture is extensive rather than intensive. The countryside is covered, but the level of management, the level of know-how, is very low in general. This represents a great opportunity for the grass roots area of technology. It is in the area of basic production wisdom that progress can be made. Developing nations find themselves in the situation with little cash to purchase the inputs of agriculture and no capital to do the sort of work needed such as building the fertilizer plants. They are cut off from the form of technology used in the West.

Gunnar Myrdal, in the article, "On Reforming Economic Aid" says that economic development can only be done in the context of total social development. He is using the screen of health, but it really does not matter where one starts, he says. It all links together. Be very clear that nothing is going to happen in agricultural development, for instance, until nutrition is improved so that people can work harder. What is needed is more intensive work in the fields, not more land or more tractors, but the engagement of labor back in the countryside. Myrdal points to that fact rather concretely and pulls it through the screen of health. In the midst of all this, technology still offers a fantastic hope for the future, a fact that needs underscoring.

Farming from the sea has got to be one of the most incredible possibilities for the future. A huge part of the surface of this planet is covered with the sea, but yields of fish and other foods from the sea have gone down radically in recent years. That can be reversed. That needs to be reversed. Technology can be applied there, and it needs to be applied. We are going to be involved in that in Majuro. We are currently working there with Castle and Cook, in the arena of hydroponics.

In an irrigated cornfield in Western Kansas with all the fertilizers and chemicals that are put on that cornfield, all the soil does is support the plant. That is the ultimate of agriculture. In Arizona where they raise lettuce, all the sandy soil does is support the head of lettuce. The soil plays virtually no part in the growth at all. Everything is put into the soil and removed and put in again for the next crop. In the extreme of that process, the soil is taken away and the plant is grown right in the water, with minerals added to the water. That process is called hydroponics, the process of growing plants in water. Obviously you can control it perfectly. Technology is working extensively in this area, and it holds great promise. On a flooded acre of land, more protein can be grown using a hydroponic method than in any other way known. Projected out a hundred years ahead, this might develop into something like a solar-lit aquarium in every residence growing all the food for the family. Technology holds great promise here for the future.

I do not, however, think that technology is going to have much impact in the next three to four years for there is a current food crisis around the world. The artificial foods which have been developed are mostly petroleum based. That is a short-lived hope, isn't it? But that is where we are. Perhaps the most hopeful area of technology is soybean technology. This offers the possibility of making quite tasty meats and other foods which do not require people to alter their eating habits, but provide a more direct input of grain.

I think we need to push hard on technology, but it is not going to come through fast enough. What we need to do instead, is to face the impending crisis in a more direct and timely way. Thirty two nations across the globe now face relatively permanent collapse. A recent article in the New York Times lists these countries across the globe, covers their geography with a grid of human skeletons, and indicates their daily caloric intake. These thirty two countries are scattered through every continent, except North America. There are some Central and Latin American countries among the thirty two endangered nations.

Nine hundred million people are affected by what appears to be the final, structural collapse of the sustenance of life. Programs to relieve the situation are underway in those nations, and population control is beginning to take effect with various income-level groups, but all that is long-range. Zero population growth can be projected for the year 2000, at the earliest. We currently add 80 million people to the population each year. Population growth is going to continue in these areas. Even with massive amounts of capital invested in those economies, much of the damage will be done. Where is the capital going to come from? These countries are faced with limited resources. Fertilizer is a limited resource. Obviously you cannot build a long-term future on that.

These thirty two threatened nations are the most politically impotent and the most politically unstable nations of the world. They do not have the political traditions that will allow them to make the necessary moves. Unless a radical shift occurs in the structural relationship of the globe to these nations, we can look ahead to enclaves of "haves" amidst a vast sea of "have-nots." I remember science fiction stories about the middle and upper classes living in enclaves, guarded enclaves, while the mob was living out in the open spaces. This is the direction in which the trend is heading. I do not know how to say that without sounding like I am trying to paint a picture of gloom, but I believe that this is the direction in which we are headed.

I see four challenges that need to be tackled at this point in history. The number one challenge is to keep alive the people on earth today and the ones that are coming in the next three to five years. Forget a good standard of living. Simply keeping them alive is the number one challenge.

The number two challenge is to keep the present structures operating. There is not time to rebuilt the structures for the short term. The present structures--crummy, collapsed, ineffective and inhuman as they are--must be used to do the job. The third challenge is to move technology to the grassroots. This means reducing technology to the level of know-how which every man can employ in agriculture. The fourth challenge is to begin the long-term job of shaping the new structures to create the new society.

What I mean by keeping the present structures operating is keeping alive the market economy which created this situation. In India, the marketplace has broken down in many sections of the country. You can no longer buy anything even if you have money. The structure is not even there to function anymore. That structure has to be kept alive until new structures can come into being.

Western economics works like this: in order to increase the wealth of the nation, there must be an increase in the rate of productivity, and I am simplifying here. In order to increase the rate of productivity, there must be an increase in capital. That is, there must be more efficient machinery for labor to use. In

order to increase capital, there must be secure profits. Payment must be made for the risk of investing that capital. In order to secure profits, there must be control of markets. If, in fact, that is the way Western economics works today, then the markets must be given and secured for those producers, so that they will produce for those markets. Some United States framers have stated that they are considering a 10% cut in production so that they could keep prices at high levels. This country has to reject that. We must produce every last bushel that can be produced on U.S. farms. The price must be guaranteed so these goods get produced. Once the goods are produced, there could be a surplus. Then there is the possibility of using other forces to distribute the surplus. However, if the surplus is never produced, using the market economy to get the basic job done, then there will be nothing to distribute. There will not even be a band-aid available to use unless these surpluses are created in the Western nations. This means utilizing that bygone, corrupt, ineffective system of the market economy to get the production needed during the short term. This is the crucial time right now.

To move technology to the grassroots is an issue of consciousness, not machinery. We know that those social process triangles are about consciousness. There are no "things" up there on those social process triangles. My favorite illustration of resources is the story about the first man who ate a tomato. It was just a rotten, red weed until he ate it and discovered it was food. Then it became a resource. Consciousness happened there. Technology is consciousness. If a person does not understand it, it is worthless. We must take technology to the producer, and put it in a form he can understand. The dirt farmer in India needs to be able to use modern technology on his terms. That may mean he uses a steel hoe. This may be the limit of the technology he needs at this point; not exactly the limit but the very concrete first step.

We need to take to him the consciousness of planting dates. There are optimum dates to plant on. If the planting date on high production corn in Illinois varies by thirty days, the yield is reduced by 25%. Planting on the 30th of May reduces the crop by 25%. Everybody knows that except the farmers who still plant corn on that date. During 1973, in the state of Illinois, which has to be the most productive, advanced, schooled and instructed place in the world, the corn yield was 110 bushels per acre. A quarter of the people produced 141 bushels. The upper quartile averaged 141 bushels. The next quartile averaged 115 bushels. The next quartile averaged 92 and then a bunch of clods on the bottom quartile only got 63 bushels. Someone needs to go out and teach those in the bottom quartile how to grow corn. Illinois land is pretty uniform. As a matter of fact, I picked out towns that have all the same soil types for that example. It boils down to poor management. If this is true here, can you imagine the range of management that goes on in other places around the world.

In order to shape the new structures, we need to reshape the local economic structures to respond directly to human needs. This needs to be done through some other vehicle than this market economy which is always going to strangle the have-nots while those with money corner the goods. The market economy is not my vision of the economy of the future. There must be some other form, and that means we need to start working on that now, in a hardheaded and direct manner.

If you want to look around for a model for some of these things where this has happened, look at China. I would like to suggest that China has a pretty good model. China has nine hundred million people, and adds eighteen million people.

a year to her population. The average caloric intake in China is about 1750 calories. This is pretty minimal since 2100 calories is recommended. The Chinese are physically small, and that is probably a pretty good caloric intake for them, even though they work hard. They are at about the break even point.

The Chinese economy is totally sustained internal economy. Twenty-five years ago, in one province two million people starved regularly each year. It was estimated that starvation might be five to eight percent per year in the population. A radical shift has occurred in that country during the past twenty five years, actually in the last ten years. It has happened with things we know about such as corporate work. Forget about communes, it happened with corporate work. Virtually everyone labors in that society. Virtually everyone has a swing at work in the kitchen or cleaning the bathroom. It is a rough use of manpower, a direct use of manpower. They say that since we do not have any machines we are going to go out and do it ourselves, with our hands and straw baskets. You know all about the massive irrigation projects done without any machinery, the massive flood control projects done without any machinery, the massive terracing jobs done without any machinery. Direct application of human labor is the key. The rest of Asia is shying away from that approach by not providing the leadership for that sort of engagement.

The Chinese have recovered wisdom. They dug back, recovered their ancient wisdom, pulled it together and acted corporately on that wisdom in creating an understanding of the land and how to do the job right. Then they began the job of building modern technology. They have purchased fifty million dollars worth of ammonia fertilizer plants from the West in the last five years. They are on their way. In fact, people are saying the green revolution has barely begun in China. The intensive use of fertilizer is still ahead for them. They have created a system of intentional distribution. In order for people to work, they had to take care of themselves. Those points demonstrate how to take a developing nation and move. They created a consensus; they provided leadership, and then they steadfastly stuck to the task they set in front of themselves. They ground away, and ground away, and ground away at their task. The Chinese have had perhaps the most consistent drive toward one objective of any nation in the globe for the last fifteen years.

China has not thought about how to build primal community in the midst of that drive. That is still ahead of them, and they are in as much of a crisis of community as the rest of the world. The Chinese created the task force to do the job that they had to do to exist as a civilization. They will worry later about how it is that they humanize their community. With that level of engagement in a community, wouldn't we not know how to take that and ground it in humanness. What I am suggesting is that the task that we have on our hands for the rest of the world is to get the action going like china has. That action has to get going now. There must be momentum in the society dealing with the real life and death contradiction of just keeping the population alive.

In this nation government price supports must be instituted at a time when they do not make any sense. The Senate agriculture committee is ready to turn a price support bill down this week while the House appears ready to approve their bill. Secretary Butts said that he thought we could make it through without price supports. What he means is that he thinks we can produce enough for our own society without having consumer prices go too high. That is what he means by

"making it through." However, that is not what I mean by making it through. I mean full production. We need price supports so that the farmer gets a guaranteed income. That is the only means I know that will get the farmer to produce full output. Again that is not my vision of the future, but I think that is the only road we have to get the immediate job done. Who do you suppose would have to walk into the Senate agriculture committee this week and demand higher price support? Do you think we have twenty guardians who could do that, or maybe fifty representatives of Town Meeting who could go do that? Maybe all the planning executives of Gulf Oil? How does one begin to move on getting government price support? Then, what is required to do that in Canada and Australia and Argentina where the grain available for export is grown in this world. Then, after the supplies are grown, how do you get them designated for global use? How is it you get the stuff allocated away from domestic populations so that the domestic does not just suck it up again and eat it because it is available? Those are the crucial issues for keeping the population alive in those developing nations.

How do you keep the present structures operating in those nations? I think we are going to have to underwrite a farmer price support in those nations. The U.S. could offer one billion dollars to underwrite production price support for the farmers in India. Set the price, we could say to India, and we will back you up. Couldn't we initiate that sort of action to provide a marketplace incentive for higher productivity to India or other developing nations? What would it mean to subsidize consumer food prices in those same nations, and in the same way, on a short-term basis, subsidize growing the crop, and then subsidize a price ceiling to keep the prices down so food could be purchased with the incomes that are there?

This kind of creative approach needs to happen. I am just throwing these ideas out as ways to begin to dialogue with this crisis. How do you provide the tactical and security training support to reduce the losses in the distribution system? It is estimated that 15-25% of India's wheat production is lost in distribution: rats, waste and bribes all along the line. How do you provide the technical know-how to control the crop once it is harvested and see that it gets where it is needed? How does the grassroots move on technology? How do we move on technology to get it to the grassroots? I would suggest that in each of the developing nations we need a consultation of the top farmers who know how to produce. Western experts could participate just as they could with the top farmers who know how to produce. We could have a Majuro-type consultation to determine the half dozen key production techniques that every farmer in India and Indiana could use. A consult is a real possibility to articulate these know-how issues, hand them over to the state so they can promote them, and then provide the technical back-up for their own people to do the necessary exploding of wisdom. The wisdom is already there. It does not need to be developed in laboratories. It has probably been there for 2000 years.

Next, we need to move on the developed nations to provide the basic tools to bring off those techniques. India needs hoes and hand tools. There is a man around who invented a threshing machine that he can make for \$100. It is adequate for a family farm to thresh its own grain using manual labor. He took it around to all the farm-machinery producers in the world. Nobody would produce it. They did not want to bother for only \$100. Some national government will have to do that or some multi-national corporation will have to engage in that sort of action. Somebody is going to have to take that thresher to them and entice them to do it with the assistance of Western resources. developing nations can provide the basic tools and can do it quickly.

Finally, it seems to me that this is the time to develop a local farm management guild. A catalytic group should emerge from these consults to create a farm management guild. We certainly can move on that at this point. Why could we not bring into being relatively quickly the back-up system to implement the basic wisdom where it is needed? How are the local economic structures going to be shaped over the long haul? I think an initial vision is needed. I would do that with a consult. Then some leadership is needed. Perhaps one might even want to involve a committee of one hundred. It is important to raise up a consensus of where we need to move in this nation. Town Meeting is helpful in that regard. Technical know-how needs to be distributed. Perhaps the guild could do that job. Impact on government or business policies is required so that existing structures are ready to move. This would be the guardian structure. It is probably important to move intensively on local distribution. This would be the task of the guardian structure. I do not know how to do that except through a parish-ward structure.

I think we already have the structures. We know which structures will do the long-term job of caring for people. We already have examples of these in operation. I am concerned about moving from the immediate job of sustaining these nations that need help to catalyzing the action that needs to precede the dept creation of community. Without that initial action there is little possibility of building the comprehensive community that we know needs to come into being. In those thirty-two nations there is plenty of motivity. They are all hungry. There is just no sign of possibility. These nations need a concrete sign of possibility which demonstrates that they can create the momentum to deal with the issues that are consuming their lives. I believe that after we begin the initial action, we would have no trouble going in and knowing how to work on creating primal community there.

Ken Hamje