

World Food Resources -- Who Will Benefit?

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As Dr. Lee Sang-Hun says in *Communism, a New Critique*, unjust profit distribution is the real contradiction of capitalist society." The free enterprise economic system of the Western world has generated a greater amount of wealth for a greater number of people than ever before, but the fair distribution of this wealth has always been a problem. In the early days of the Industrial Revolution, a wealthy minority of land and factory owners lived in conspicuous luxury while the hungry and overworked proletariat sweltered in dirty factories and overcrowded slums. Movements arose in reaction to this injustice from workers and intellectuals; the international Communist movement came about in this way. However, contrary to Marx's prediction of capitalism's imminent collapse, new machines were invented, wealth multiplied, and the protests of the intellectuals and working people brought about reforms in wages, unions and labor laws. Nowadays workers in the Western world enjoy a high degree of affluence, and the rising middle class has raised hopes that capital will "level out" and the pockets of poverty remaining in the Western world will eventually be eradicated.

The hunger gap

However, many people in the well-fed world are unaware that a much more serious maldistribution of wealth occurs world-wide, between the highly industrialized countries and the underdeveloped countries of Asia, Africa, and Latin America. In particular, the "hunger gap" is a growing concern among ecologists and world planners. Nobody can say for sure how many people of the world are malnourished, but all agree that the number is large. The President's advisory council on the world food supply put the number at 50 or 60 percent of the less industrialized nations, which means one third of the earth's population.

Food resource expert Georg Borgstrom puts the number much higher. According to him, 2.5 billion of the earth's 3.8 billion people, or two thirds, living mainly in Asia, Latin America, and Africa, are underfed or malnourished and are short of most necessities of life such as land, shelter, and water; 500 million live in relative luxury in America, Western Europe, Australia, New Zealand, and the River Plate countries of South America; and an intermediate group of 700 million, inhabiting mainly Eastern Europe, the USSR, and Japan, manage to just keep above the minimum level in most areas.

Whatever the true numbers, we can see that the world's wealth is distributed according to a pyramid resembling the "primitive" stages of capitalism: a wealthy minority reigns in luxury on top of a slightly larger middle class struggling to keep above poverty, on top of multitudes of destitute people living on the verge of starvation.

Population growth

This chronic maldistribution of wealth is much more intolerable now than it ever was. Most projections and estimates of the world's population indicate that there is little likelihood that the world's population will number fewer than six billion people by the year 2,000, even if current efforts at birth control are successful; most projections point to a likelihood of around seven billion. In the face of this exponential growth, no less than a quadrupling of the world's food resources by the year 2,000 will be adequate to feed the hungry millions of the future, considering that the world's food stocks are already inadequate. As rural poverty and overcrowding increase, the desperate people stream into the cities, but nowhere is industrialization developing rapidly enough to provide for these unfortunates.

Vitamin deficiency diseases, intestinal parasites, and malnutrition sap the vitality and productivity of millions; the quality of life declines and tensions mount in the overcrowded cities.

In reaction to this unfolding tragedy, massive and often heroic efforts have been launched by international agencies, governmental bodies, and a wide variety of private and religious groups to try to alleviate the tide of misery. But so far their efforts have been to little avail. Massive shipments of grain have been sent to India and the developing countries from America and Canada, but these in effect have amounted to little more than crumbs from the rich man's table.

Even the enormous prosperity of the Western world will not last long if present trends continue, according to the authors of *The Limits to Growth*: "Assuming no major change in the present system, population and industrial growth will certainly stop within the next century, at the latest." This halt, they say, will be the result of a catastrophic collapse, brought about by exhaustion of the earth's nonrenewable resources, unacceptable increase in pollution, the inability of the world's food supply to keep up with the population growth, and the corresponding increase in mortality rate.

Signs of a coming crisis are already cropping up in the Western world: in America we see the beginning

of gas rationing; food prices are rising; and services and quality of life in the cities are declining.

In other words, most indications are that most of our generation and our children will live to experience a world tragedy of unimaginable proportions unless something is done *now* to radically change the world system. In this article, we will give a brief overview of the state of the planet's resources, the options left open to mankind, and some suggestions as to how to bring about the needed changes.

World food resources

Mankind is nourished primarily through agriculture and fisheries. Plant products account for nine tenths of man's caloric intake, and this share is likely to increase as population mounts. Largely because of cost, large-scale livestock production is chiefly an activity of the industrialized nations, while most of the human family depends upon plant protein, supplemented at best with fish. Animal products, although they take up only a tenth of the world's calories, account for one third of the earth's high-quality protein, which is the most essential element of sound nutrition. Grains such as wheat, rice, corn, and sorghum account for two thirds of man's plant protein, while tubers, beans, legumes, seeds and nuts provide important protein supplements.

Grains, which provide for the bulk of mankind's caloric and protein requirements, are by themselves an inferior source of protein from the standpoint of human nutrition. However, over the centuries mankind has developed through trial and error certain combinations of plant foods which provide the right balance of amino acids. Beans and corn, as in Mexican tacos and frijoles, provide a good balance, as does rice and kimchi (pickled cabbage) in Korea and China. Nowadays nutritional science has progressed to the point where all man's nutritional needs can be very precisely determined.

It is in the area of protein that the greatest anomalies occur in the distribution of the world's food resources, and is the key factor in the "hunger gap," which is mirrored in the fact that 65-80 percent of animal products such as milk, eggs, and meat are consumed by less than one third of the human family. Without protein in the right amount and quality, children's growth is stunted, especially the growth of the brain and mental faculties. Also resistance to disease is lowered and vitality is sapped. Vitamins and minerals are also important, mainly as "lubricants" and help the body operate smoothly and utilize nourishment most efficiently.

Land use

Since world food production is totally dependent on plants, certain prerequisites such as land, topsoil, water, and suitable climate are of crucial importance. Soil fertility depends upon microorganisms and other fauna living in the soil and humus, particularly nitrogen-fixing bacteria which release nitrogen in the soil for the use of plants. Nitrogen is a key element in the manufacture of proteins, and trace elements such as zinc, iron, and copper are also important in nutrition.

Since plants use up a large amount of minerals in the soil, fertility must constantly be restored either naturally through falling leaves and organic matter, or by fallowing, manuring, crop rotation, and use of fertilizers. Millions of acres of the world's arable land have been turned to desert through over cropping, overgrazing, and deforestation, which increase erosion of the topsoil through wind and water erosion.

Today's large-scale mechanized agriculture in the industrialized nations tends to increase leaching of the soil by removing top cover, and increases the incidence of insect pests by eliminating their natural predators such as frogs, insect-eating birds, and snakes. Therefore, heavy use of chemical fertilizers is needed, as well as constant chemical warfare against insects. However nature often counterattacks by developing insect strains which are immune to the pesticides. Thus a substantial proportion of the crop is still lost through insects.

In the developing world, the loss through insects, disease, and mold is even greater -- often amounting to half or more of the crop. In India, it is estimated that rats consume an amount of grain equal to the amount brought into the country as emergency aid. Much of the reason for this situation is lack of technology such as seed dressing, preserving of grain in concrete silos, cold storage, and other advances which Westerners take for granted.

Search for new land. In mankind's relentless search for food, most of the arable land available for cultivation has already been used up. Man has advanced up the hillsides; irrigated deserts, and reclaimed land from swamps and from the sea, but this has been quickly used up. There has been much talk about cultivating the Amazon and African jungles or irrigating the Sahara through atomic powered pumping stations.

However, the jungles, when stripped of their luxurious growth, do not have suitable soil or climate for effective agriculture as exists in the temperate zones. Irrigating the Sahara would require a huge outlay of capital, and pollution from atomic wastes and heat would be a problem. So far, it seems more economical

to increase the yields available per acre by developing new high-yield strains of plants and by improving agricultural techniques.

There have been many science-fiction dreams put forth about synthetic food factories where synthetically-grown tissue cultures on endlessly moving conveyor belts are sliced up for steaks and chops; vast chemical vats growing algae culture which, with artificial flavoring and texture, is turned into endless variety of foods; completely computerized and mechanized farms enclosed under giant plastic bubbles for complete climate control, and so forth. However, such dreams are far from being realized quickly enough to alleviate the very immediate crisis, and besides would require an incalculable expenditure of industrial capital and material, which would put a greater load on an already overtaxed resource base.

Green revolution

The so-called "green revolution," the hybridization of new, high-yield wheat and rice strains, has alleviated the food problem to some extent in Southeast Asia, the Philippines, and Korea, but the ever-growing population seems likely to eat up those gains very quickly, and the large amount of fertilizers and advanced techniques necessary to raise such strains often makes their cultivation out of the reach of the poor farmer. In India, for example, only the richer farmers can afford the capital to try such new grains, and they sell their increased production for cash; thus their incomes increase, but nothing reaches the poor farmer in the way of increased yields or nutrition.

In the area of livestock production, much has been made of the giant mechanized poultry, dairy, and hog farms which have been recently developed in Europe and America, which use assembly line techniques, computerized feeding and climate control, and millions of animals in one building. This has been responsible for a tremendous increase in the availability of meat, eggs, milk, and broilers for the affluent Westerners, but hardly any of this reaches the world's poor and hungry. As a matter of fact, vast amounts of high-protein feed such as grain, soy beans, and fish meal, are diverted from the underdeveloped countries, where they are desperately needed to feed their own population, to fatten the livestock of the Western world. Thus most cattle in the Western world eat higher quality diets than the majority of human beings on this planet. Some scientists say, that as population mounts it will become increasingly less feasible to produce food through converting plant protein into animal protein with the inevitable nutritional losses involved, thus forcing mankind into vegetarianism.

Agricultural exports

It is important to note that the large-scale agriculture which has produced such marvelous increases in production depends very heavily on large capital outlays for fertilizers, machinery, insecticides, refrigeration, transportation, etc. This makes mechanized agriculture mainly a hobby of the Western world, while most of the world's people must sustain themselves through small subsistence plots worked by hand or draft animal. Whatever large-scale agriculture that exists in the developing countries is largely in the form of plantations which produce cash crops for foreign consumption.

Nine tenths of the developing countries' exports are agricultural products; they are the sole suppliers of sugar, coffee, tea, cocoa, and bananas, to the rich nations and are a major supplier of oilseeds, particularly peanuts, which go to the margarine industry in the West, as well as oilseed cakes (the press residue) which goes to animal feed. Only a pittance of these nutritional riches reaches the poor who produce them. In return, the poor countries receive industrial goods and foreign exchange, which unfortunately tends to benefit only a wealthy minority of the population. In general, the exportation of the poor countries exceeds importation, partly due to the heavy burden of debt due to foreign loans. In Latin America, where this burden is heaviest, in the mid-1960s no less than 15 percent of its export earnings were used to service interest payments on foreign loans. It is a great irony that this "colonial" system of exchange persists today, even though the former colonies became independent after World War II.

Fisheries

Since time immemorial man has harvested the seas-shell mounds dating from prehistoric times have been found in many parts of the world. As the search for food and feed has expanded, using the resources of the land to its limits, the race to exploit the riches of the sea has gone full steam ahead. Since 1955, the world's fish catch has more than doubled, largely due to a revolution in fishing technology, such as radar, long-distance trawlers, and floating factories which process the catch at sea. Russia and Japan have made the greatest strides in that area.

Fish is rich in high-quality protein, providing one fifth of the earth's supply, more than all of the registered beef cattle. Japan, Korea, Southeast Asia, Portugal, and many parts of Africa depend upon fish as their main source of animal protein, and is the "poor man's meat" all over the world.

However, not all of the fish catch is used directly for human consumption. About half of the fish which is

caught goes to make fishmeal for animal feed or margarine to supply the overflowing larders of the West. Usually viscera and "trash fish," species relatively poor for human consumption, are used for this purpose, but even first-rate food fish such as herring, particularly in Norway, pass on to the fishmeal and margarine factories. Peru boasts the highest fish catch of any nation, mostly of one species, anchoveta, but practically all of this goes to animal feed. In this way another rich source of nutrition bypasses the world's protein-hungry majority.

There has been much discussion of cultivating the sea in the same way as plants and livestock are cultivated on land, but the food chain of the sea is more complex than that of the land, and much research must still be done to understand the prerequisites and expense of "mariculture." Freshwater cultivation of fish has continued since ancient times, and is done on a large scale in the fingerling hatcheries of trout, sturgeon, pike, and perch. Also oysters and seaweed are cultivated along the coasts of many nations.

However, freshwater resources are being jeopardized by pollution. In Lake Ontario, for example, the fish catch has declined by factors of 100 to 1,000 for most species, and pollution along the coasts is likewise threatening oyster and seaweed production. Severe chemical poisoning has appeared in significant numbers of people in Japan, for example, because of mercury in fish caught along the coast.

So far, the greatest tonnage of fish is produced through the large ocean-going fishing fleets, but rapid depletion of the world's fish stocks will soon force restrictions on fishing and the necessity for preserving and cultivating the sea's resources. Whales, for example, have been so ruthlessly hunted that most of the larger species are all but extinct.

Nonrenewable Resources

Many people have naively assumed that the problem of food production for the poor countries will be solved by helping them reach the same level of industrialization as exists in the West, so they can take advantage of the technological advances in food production.

However, most ecologists doubt that the world's ecosystem can sustain the same level of industrialization 86 world-wide as exists in the rich nations, considering the limits of the world's non-renewable resources such as coal, oil, and metals. According to the "First Annual Report of the Council on Environmental Quality" (Govt. Printing Office, 1970, p. 158):

... it would appear at present that the quantities of platinum, gold, zinc, and lead are not sufficient to meet demand. At the present rate of expansion... silver, tin, and uranium may be in short supply even at higher prices by the turn of the century. By the year 2050, several more minerals may be exhausted if the current rate of consumption continues. Despite spectacular recent discoveries, there are only a limited number of places left to search for most minerals. Geologists disagree about the prospects for finding large, new, rich ore deposits. Reliance on such discoveries would seem unwise in the long term.

Also there is serious doubt that the world's ecosystem can absorb much more polluting industrial activity. Indeed, many scientists are saying that irreparable damage has already been done to the world's fragile biosphere. In the words of G. Evelyn Hutchinson in *Scientific American*, September, 1970, p. 53:

Many people... are concluding on the basis of mounting and reasonably objective evidence that the length of life of the biosphere as an inhabitable region for organisms is to be measured in decades rather than in hundreds of millions of years. This is entirely the fault of our own species.

This is the dilemma which faces the modern world. In order to feed the world's population, agricultural productivity must be increased, and new lands opened for cultivation. However, this requires tremendous outlays of capital and food production resources, together with the benefits of industrialization. However, further industrialization on top of the world's already overloaded industrial base would use up more and more of the earth's limited resources and increase pollution beyond an acceptable level.

Clearly, a trade-off must be made. The Western world must sacrifice its current irrational production of gadgets, luxury items, and dainties for its already overfed and over pampered minority, and divert a much greater proportion of its capital to developing food resources in the starving world. The world cannot avoid a major disaster as long as so much of the world's limited resources are channeled in to supporting the frivolous pastimes of the affluent West.

Another large chunk of the world's resources is tied up in the enormous expenditures on armaments, not only from the arms race between the major power blocs, but also in extravagant arms expenditures in many of the developing nations. If the chronic state of tension, ill-will, and mistrust that exists between nations based on the Cold War and other conflicts could be eradicated, enough capital and resources could be freed to substantially- if not totally alleviate the food crisis. Never before in world history has the necessity to "beat their swords into plowshares" been more acute than now.

WHAT TO DO

The coming crisis has been foreseen for a long time, ever since Thomas Malthus revealed that population increases geometrically, while food resources increase arithmetically. Therefore, numerous proposals have been given to avert the danger. Some of these are outlined below:

1. Allow things to take their natural course

Insane as it may seem, many cynical or fatalistic people, usually ignorant of the true dimensions and nature of the problem, suggest that natural controls such as war, famine and disease should be allowed to take their normal course. A growing number of fundamentalist Christians of the dispensationalist school see world famine and war as fulfilling prophecies concerning the "end times," and therefore await the coming holocaust, expecting to be miraculously delivered from tribulation. However, neither war nor famine has ever been an efficient check on population growth, as can be seen in Fig. 1. Population growth.

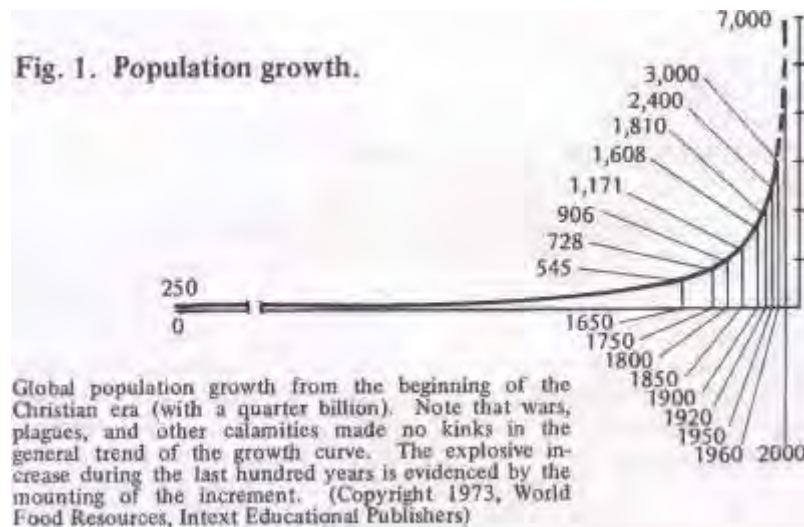


Fig. 1, "World Population."

Notice that World Wars I and II, and all of the major wars and revolutions since then didn't even make a dent in the upward rise of the population curve. Also, famine will not succeed so much in killing off great numbers of people as it will permanently maim them and cruelly force them to live their lives in hopeless misery, through no fault of their own, incapable of fulfilling their minimum potential as human beings. Children are still born under conditions of malnourishment, but their growth and mental development are permanently impaired. Thus to let the current state of malnourishment continue will only add millions more defective and mentally stunted individuals to the human family.

Concentration camps have shown how long people can linger on a diet of less than 800 calories a day, even though horribly wasted and deformed. Is this the result that God's love calls us to bring about? Certainly not, since Jesus said, "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me." (Matt. 25:40) A man of true faith and conscience could only do all he can to prevent such a tragedy.

2. Bring about violent revolution to forcibly redistribute the profits to the poor

This is the Marxist solution, and is being advocated by an increasing segment of the world, not only in Communist countries, but in college campuses and city slums in the West. As much as we might recoil from such a course, the fact is that, if the West remains a mere spectator to the unfolding world tragedy, violent revolution will not only be inevitable, but morally justified. The French revolution is a case in point. We can deplore the excesses and violence of the revolutionaries, but if it weren't for the obstinate greed and apathy of the ruling class, the revolution could have been avoided. To consume limited amounts of resources for idle pleasure to the detriment of millions left to starve is indeed a crime against humanity, and criminality calls for punishment or forcible restrictions until the criminal repents. Many concerned thinkers today are warning that if voluntary changes are not brought about, totalitarian methods will become inevitable to prevent total disaster.

However, whenever totalitarian methods have been applied, as in Russia and China, they have still failed to alleviate the problem. Forced collectivization of farms brought about famine rather than abundance in Russia and China, and collectivized agriculture has proved so inefficient and wasteful that Russia and China have been forced to import large quantities of wheat from the West to stave off catastrophe. Also, the restrictions and spiritual emptiness of life under Communism denies a full life for most, even though they may have enough to eat. In Red China, for example, despite all that has been written about the

"miracles" of food production under Chinese Communism, thousands still risk death every year to flee to nearby Hong Kong.

Experience has clearly shown that the free enterprise system is the best way to multiply wealth and provide a spiritually satisfying life. The problem is to equitably distribute wealth and opportunity while preserving freedom.

3. Institute controls on population and industrial growth to bring about a "steady state" society

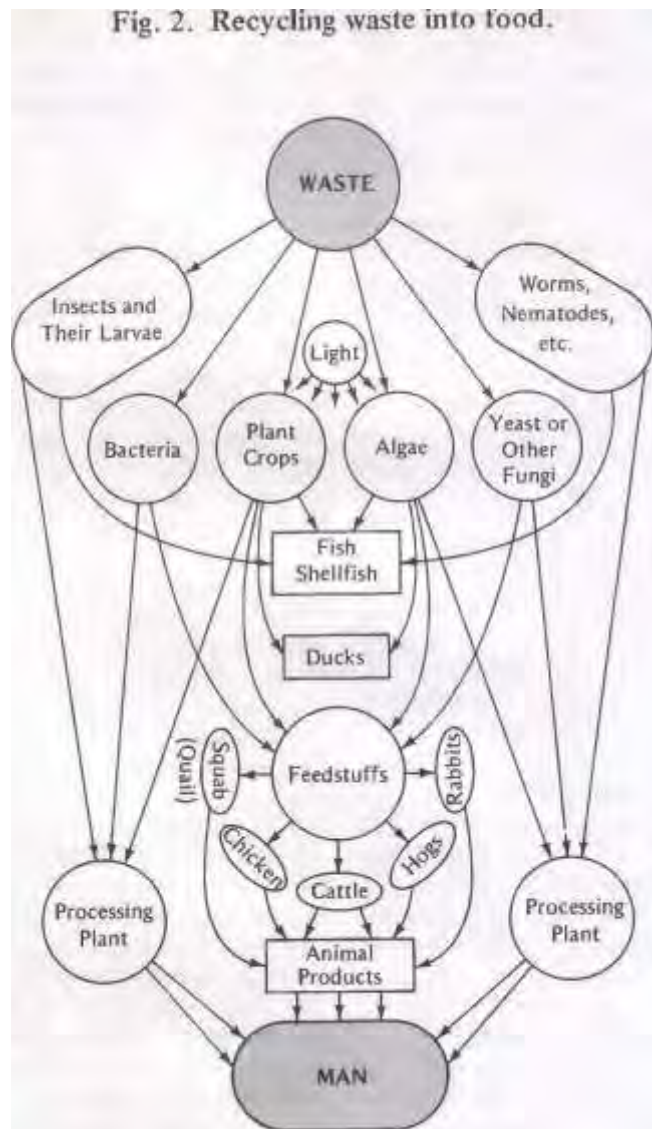


Fig. 2. Recycling waste into food.

This is the solution advocated by the "Club of Rome," a consortium of scientists, businessmen, and world planners who published the book *The Limits to Growth*. Using computer models, they came up with the following preconditions to bring society into a state of equilibrium.

- a. Population is stabilized by having the birth rate equal to the death rate, and industrial growth is stabilized by setting investment equal to depreciation;
- b. Resource consumption per unit of industrial output is reduced;
- c. Economic preferences are shifted more toward services and less toward factory produced material goods;
- d. Pollution per unit of industrial and agricultural output is reduced;
- e. Capital is diverted to food production to produce sufficient food for all, even if such investment involved a sacrifice from the rich countries;
- f. High priority is placed on finding new ways of soil enrichment and fertility; for example, composting urban waste and returning it to the land;
- g. Better design of products for durability and easier repair, increasing lifetime of capital goods and eliminating wasteful "planned obsolescence."

Along with controls, the authors of *The Limits to Growth* advocate full application of technology to such problems as recycling, more efficient utilization of nonrenewable resources, new sources of protein and improved strains of plants and livestock, finding ways to harness the ever-present energy of the sun, which is the most pollution-free source of energy, and so forth. The authors figure that, with their model, world per-capita income could stabilize at \$1,800 per year-about the income in Europe.

All of these steps seem to be most reasonable and practicable, and are heartily supported by this writer. The problem remains, however, how to put these steps into practice. Can the people of the Western world be expected to voluntarily sacrifice their conveniences and comforts, to actually "de-industrialize" for the sake of the world? The technical solution to the world's resource dilemma is well within our grasp; but to implement the solution will require a drastic ideological change. All economic or political systems are built according to the value-premises of the people who form them. The suicidal direction that the world is heading toward results from a false and destructive value-system held by the people in power.

A Principled solution

In the Unification Principle, the ideal world model is the human body and its operation. In the human body, nourishment is provided to each cell and organ according to its nutritional needs and its degree of involvement in maintaining the health and well-being of the whole. In an ideal world, resources would be distributed according to that same criterion; or as in a loving family, where every member receives equal love and concern, along with sufficient amounts of the necessities of life to realize their full potential.

However, the resources of today's world are distributed not according to the nutritional needs of the world's people, nor according to the well-being of the whole, but according to the purchasing power of a minority who use these resources either for their own pleasure, as in the democratic world, or for the enslavement of others, as in the Communist world. Values based on selfishness, greed, and materialism have created such monstrous anomalies; therefore those value-systems must be abolished and be supplanted by true values if the world is going to be saved.

How can we do it? Through spiritual revolution! Many individuals have experienced the transforming effect that the love of God through Christ can have; the complete change in life's priorities which accompanies a true relationship of love with God. As Jesus said, "Therefore, take no thought, saying, what shall we eat? or what shall we drink? or wherewithal shall we be clothed?... But seek ye first the kingdom of God, and his righteousness; and all these things shall be added unto you." (Matt. 6:31,33) If such a transformation can be brought about in the life of an individual, then the same transformation can multiply to the family, society, nation, and world. As we hope we've made clear in this article, such a course alone can possibly prevent the catastrophe toward which the world is heading. Therefore, not only Christians, but all men of conscience must unite to bring about the spiritual change which is necessary.

This spiritual revolution must be more than just Bible thumping evangelism, however. Many people point to the rising attendance in fundamentalist churches or the "Jesus movement" as a sign of spiritual renewal; but are these people crowding the churches and forming Christian communes to deal with reality or to escape from reality? It would actually be a terrible tragedy if millions of good people become ideologically de-committed to doing anything about the world's problems by being converted to a naive belief in a supernatural deliverance, or by a negative dropout attitude. In order to have any lasting value, the spiritual revolution, as we see it, should have the following characteristics:

1. It must elevate spiritual truth to a new dimension, to absorb and overcome the materialistic value-systems which dominate the world system today;
2. It must unite religion and science, so that the great technological advances made in this century can be applied to relieving the world's suffering, according to the dictates of a revitalized conscience;
3. It must create dedicated cadres of people who are willing to devote their entire lives to a sustained effort to put heavenly values into practice in every field of endeavor religion, culture, economics, politics, and science in order to fulfill in reality Jesus' prayer that "Thy kingdom come. Thy will be done, in earth, as it is in heaven";
4. It must begin *now*, and multiply its influence more rapidly than the rate of the world's deterioration.

Sources: Georg Borgstrom, *World Food Resources* (New York and London: Intext Educational Publishers, 1973) and *Too Many* (New York: Collier, 1971); Donella H. Meadows et al., *The Limits to Growth* (New York: Signet, 1972).