The science to solve the global food crisis

by Carol White

The following is the address delivered by the author, who is editor-in-chief of the magazine 21st Century Science and Technology, *to open the Sept. 4 panel on solving the world food crisis under the title, "Our* Cosmos *is the Universe."*

This panel is devoted to finding solutions to the problem of feeding the world. At the present stage of economic decay, even minor fluctuations in weather have enormous consequences, and in fact, we appear to be facing abnormal weather conditions on a global scale, and this may well be the case for years to come.

Obviously, we are going to have to shepherd all of our existing resources and bring marginal resources on line quickly. We will have to do this by considering the potentialities for growing food on a global scale, so that we can compensate for drought in the Midwestern United States by gearing up production in New Zealand or Argentina, and so on. One of the purposes of this conference is to bring together the experts who know how to do this. We should resolve here today upon certain basic steps, which must be taken immediately to prevent the crisis from becoming unmanageable; and then we have to recruit an international mass movement prepared to fight for these goals. It will have a large potential constituency: everyone who likes to eat!

The proportions of the crisis are already such that we cannot merely patch things up. We need massive, new large-scale water projects. We probably will need to be able to control weather systems globally. We certainly must reforest the major tropical rain forests which have been destroyed. Even were we able to grow everything that we need to eat hydroponically—or to be totally absurd, let us say we grew our food on the Moon—we would still need a green Earth in order to maintain our planet as a habitable environment. The fact that we find the countryside beautiful is perfectly lawful, because vegetation is integral to the vitality of our planet, and what is alive is beautiful.

We are presently facing not only pandemics which threaten to literally wipe out the starving people of Africa, but we see countries such as Sudan overwhelmed by floods and plagues on a biblical scale. Yet, the simplest measures necessary for insect control—such as on-the-ground spraying with dieldrin—are prohibited by fiat on the pretext that they might destroy the ecological balance of nature. You have to understand that for ecologists, locusts and disease are acceptable natural phenomena. Two years ago, we proved that we could destroy locust swarms using radio-frequency weapons—a biological SDI—but no government was willing to implement this technology.

The major problem which we face, in searching for more fundamental solutions, is the incompetence of most science today. Take the case of AIDS. We can't deal with the problems of the biosphere by giving it a condom! AIDS itself was probably created by a laboratory failure, which allowed the accidental genetic recombination of human genetic material with a bovine Visna-like virus. The likely culprit for this is Soviet laboratories, which are known to be extremely sloppy. But even in technically proficient laboratories, biologists lack any theory adequate to explain living processes. We have had marvelous results in genetic engineering of hybrid seeds, but we now have a sick planet. To cure that, just as to find a cure for AIDS, we will not be able to rely upon molecular biology. We must develop the methods of optical biophysics.

Imagine trying to remedy weather conditions by purely trial-and-error methods. The Russians had a plan for this; they had a master plan for warming Siberia. The only problem was that it would have brought on the melting of the polar ice cap! But we may be able to divert the jet stream over the United States, when it gets stuck up north, by heating up a track for it to follow. . . . When we do this, we had better know what will happen to the jet stream in Japan, and to the monsoons in India.

The paradigm of Mars colonization

Ironically, the kinds of problems we must solve now are increasingly similar to those we will face when we colonize a planet such as Mars. There we have to create a biosphere and here we must defend one, but the problems are similar. . . .

To accomplish the mission proposed by LaRouche, to create a science city of a half-million persons on Mars, we will have to create a self-sufficient city under a space bubble—a city that recycles water mined from the surface and recycles oxygen, and in which all its food is grown. Yet, the inhabitants will also wish to be able to freely venture outside their space city. This means we will have to transform the weather system of Mars. At present, it has an atmospheric pressure only 1% that of Earth, composed primarily of carbon dioxide. Probably, man could survive on Mars merely carrying a light, portable oxygen supply, and without a pressure suit, if we could increase the atmospheric pressure to one-sixth that of Earth. We will also wish to create an ozone layer as a shield against radiation, and to raise the temperature. At the same latitude as Cuba, Mars temperatures still get down to −123°F.

To be able to get to and from Mars in a matter of days or weeks—rather than years—we will need fusion propulsion for our rockets, and any colony in space of more than a few

people will be powered by nuclear energy. Simply to sustain people in a space environment takes 100 to 1,000 times more available power per capita than we utilize here on Earth.

A serious national commitment to colonizing the Moon and Mars would involve assembly-line production of modular nuclear plants, and the rapid development of fusion power. Within a short time, all of technology would be reorganized around plasma processes and the application of directed energy, and machines as we know them would become obsolete.

Let's look at the potential of those technologies in terms of what we need right now, if we are to produce sufficient food to feed the world. Even in the United States, only 19% of agricultural land is irrigated. In order to make large-scale irrigation profitable, energy must be significantly cheaper. The cost of nuclear energy today is artificially inflated because the industry has been under constant political attack. Every nuclear plant now under construction should be rapidly pushed through to completion. The case of Dukakis's sabotage of Seabrook and Cuomo's attempt to destroy the Shoreham nuclear plant give the game away. The anti-nuclear movement is not genuinely worried about safety questions; they simply don't want us to have cheap energy or cheap food. To really cheapen the cost of energy means going to a fusion-based economy, but in the meantime, we must massively expand our hydroelectric capacity and our nuclear capacity.

The U.N.'s Food and Agriculture Organization (FAO) is very big on population control and the so-called carrying capacity of the Earth. Even they admit that the Earth could easily sustain 50 billion people if everyone farmed on the level of technology now practiced in the United States. In 1983, U.S. utilities had a total capacity of 658 gigawatts of power to supply a population of 234 million people. That's about 2.8 kilowatts per capita. But we know that we now have serious problems of water management to handle, so let us suppose that we need to increase that amount tenfold, providing 25 kilowatts of power to each of 50 billion people.

To meet a requirement on this scale, we must develop fusion power. There are no scientific problems in doing this, the money has simply not been spent to realize our already demonstrated capability. Within 10 years, we can easily have a demonstration fusion power plant. If we wish to build a city on Mars, as LaRouche proposes, then we will need a space flotilla of 100 ships. Each such ship should be powered by a fusion power generator with a 1 to 10 terawatt capacity—let's say 1,000 terawatts in all. If we provide an equivalent amount of fusion power back here on Earth, then we can support 50 billion people, at 100 times the per capita consumption of electricity in the United States today. This will be extremely cheap energy by today's standards.

The same kind of cost-accounting mentality which Robert McNamara brought to the Department of Defense when he introduced the body count in Vietnam and lost the war there, has been applied to agriculture. Since the mid-sixties, a big lie has been repeated again and again. "We have a surplus of food," they say. "Aren't people dying of hunger?" you might ask. "Of course not, stupid," is the response, "How could that be when we have a surplus of food?" By this "logic," food is overvalued in price, and it is no longer cost-effective to invest in water projects or agricultural research. This is the kind of logic which has been applied to forcing farmers to sell their food below the cost of its production, and then to finance production by taking out loans. This is the logic which has led to the destruction of already existing infrastructure in the United States.

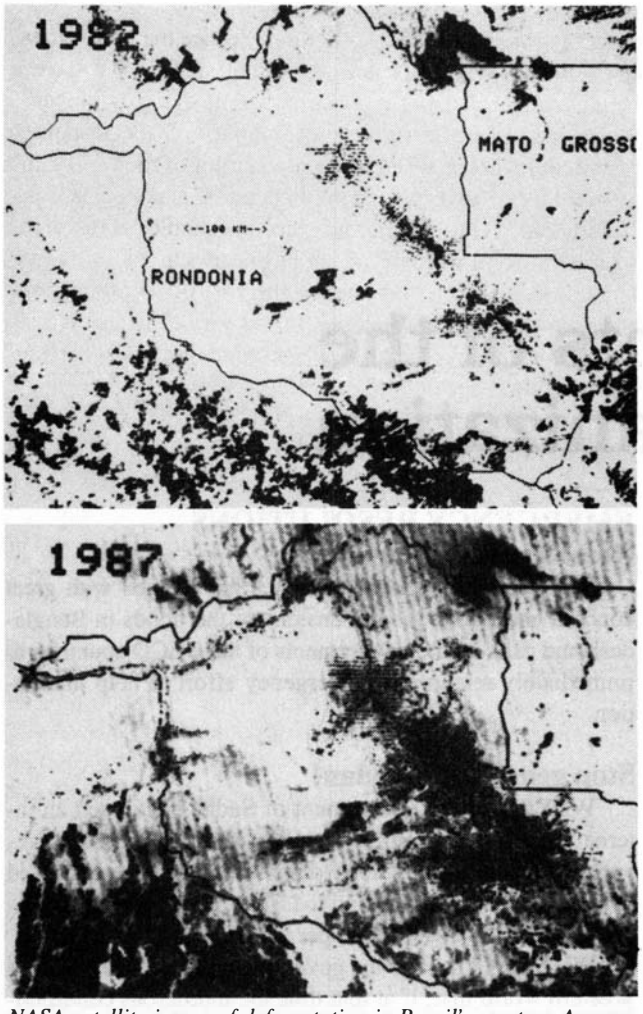
Advanced capacity looted

Over the past decade, there have been no new water projects; railroads and canals are being abandoned; and the electrical grid is strained beyond its capacity. We are looting our capacity to produce in the United States in the same way that Brazilians and Indonesians are being forced to loot their rain forests. If the human species is to survive, we must maintain what we call the equipotential of nature. This means that we must discover new technological means to replace those resources—like water and fuel—that we consume.

We need massive irrigation projects like NAWAPA [North American Water and Power Alliance] in the United States, Canada, and Mexico. This project to pump surplus water from the north of the continent, which could pay for itself by producing hydroelectric power, was proposed by the Parsons Company during the Kennedy era. We probably could not have won the Second World War without the Hoover Dam and the Tennessee Valley Authority, which were built while Franklin Roosevelt was President. We certainly would not have had nuclear bombs without them.

Not only did John Kennedy set us on the road to the Moon, but in a 1960 speech in Billings, Montana, he outlined a nine-point natural resources program. This included development of hydroelectric power, building federal transmission lines, research in desalination, flood control, and full development of the power and water of the Columbia River basin. Had NAWAPA been constructed, water use could have increased by practically 100%, doubling the amount of land in irrigation and increasing surplus power by 40 gigawatts. Although it was not directly proposed by President Kennedy, this $100 billion project should be thought of as a sister project to the more famous Apollo Program. Water projects and the space program were both sabotaged from the beginning of Johnson's first elected term in office.

We must immediately begin construction of the series of canals, dams and reservoirs, pumping stations, and hydroelectric plants that were specified under NAWAPA, and we must do more. We need to pick up on short-term projects that will bridge the gap of 10 years or so until the NAWAPA project can be brought on line. Our transportation system here in the United States, both rails and waterways, has been



NASA satellite image of deforestation in Brazil's western Amazon state of Rondonia, between 1982 and 1987. The dots indicated by arrows show the spread of deforested areas in a mere five-year period. This was one of several presented to the Food for Peace conference by EIR *researcher from Panama Rogelio A. Maduro, who spoke on the massive destruction of the Amazon rain forest and its disastrous impact on global climate. The deforestation is occurring largely as a result of multinationals' clearing of forest for huge cattle ranches and misguided Amazon "colonization" schemes run by the World Bank. It has undoubtedly been an important factor in the anomalous weather phenomena now afflicting the globe. Latest figures indicate that over 95,000 square miles of rain forest will be burnt in the Amazon this year, an area larger than West Germany.*

allowed to deteriorate. Ports have been converted into "waterfront real estate." The same situation is magnified a hundredfold in the countries of Africa. We have to provide for excessive rain as well as drought, hence we need major flood control projects.

One of the most important aspects of a national mission in space is that it transforms the consciousness of everyone here on Earth. We saw this with school children in the Kennedy era, just as we see its opposite in our youth today. Now, they lack a goal sufficient to challenge their imagination, and they are easily preyed upon by drug merchants, and the like. Not only do we need a space-age technical capability, but we need the cultural optimism which such a mission will generate. It is not the existence of new frontiers that defines a healthy culture, but the method of tackling those frontiers. America was not built by dirt-farming, but by a commitment from the first to develop the frontiers of science and technology.

Benjamin Franklin was first and foremost the world's leading scientist of his day. His approach to the study of electricity was to comprehend the whole global climate system, particularly the functioning of electric charges in causing storms, something we still do not really understand today. It was Franklin who discovered the existence of the Gulf Stream by testing the temperature of the Atlantic Ocean as he traveled back and forth to Europe on political missions.

Franklin himself founded the University of Pennsylvania, and in 1783 the state of Virginia provided for the first land grant college, now the University of Kentucky. When this nation was founded, our farmers may not have had the means we have today to farm scientifically, but they had precisely the same outlook, which is why we were the most literate nation on Earth, and why it was practicable to attempt to create a genuinely republican nation.

Von Humboldt's project

The United States of America was created and then defended by an international network. In the forefront of this movement were Friedrich Schiller and Wilhelm and Alexander von Humboldt. They sought to transform Prussia according to the American model. Alexander von Humboldt organized an international group of scientists whose task was to map the whole globe. He himself discovered that vegetation is transformed similarly at similar altitudes, and at similar northerly and southerly latitudes.

Von Humboldt's project was to encompass the whole globe, beginning with its place in the solar system, then treating the Earth's magnetic field and the Northern Lights, relating these to the Earth's core, and only then proceeding to look at the Earth's surface and questions of biology and physics. He gave a series of lectures unifying the study of meteorology, geology, astronomy, biology, and physics to the elite of the nation of Prussia, in order to train them to become statesmen, and later published them in a beautiful two-volume book, entitled *Cosmos*. This is precisely the rigorous approach which we must take today, if we are to proceed with our own work properly.

Farmers, like test pilots and astronauts, are scientists by trade, even though they may not always be aware of it. Every cultural renaissance has been led by scientists, from Plato to Leonardo da Vinci to Benjamin Franklin and his collaborators. Our movement will be built upon the scientific discoveries of these scientists and the discoveries of our own Lyndon LaRouche.