Biological Holocaust Report

New disease epidemics in Brazil show water and sanitation collapse

by John Grauerholz, M.D.

A series of catastrophic events is occurring in South and Central America as the inevitable consequence of the collapse of water management and sanitary infrastructure. Unless major interventions are made into this situation quickly, these catastrophes will have worldwide impact.

Water is essential to life. The human body is approximately 70% water and while the average human can survive for weeks, and sometimes months, without food, total restriction of water will lead to death within one week. Besides physiological requirements for consumption of water, water is essential for numerous hygienic functions, including washing of the body and garments and assisting in the sanitary disposal of solid and liquid wastes. To a great extent, the growth and development of civilized societies has been predicated on the development of infrastructure and institutions designed to separate what we eat from what we excrete. Conversely, when such institutions and infrastructure deteriorate under cultural and economic collapse, the result has been epidemics of disease which accompany the extinction of that society.

The situation in Brazil illustrates all of the interrelated factors in the water-sanitation equation. Brazil has been suffering an ecological holocaust of major proportions due to the biggest drought in the history of the country, concentrated in the south, and the worst flooding in 50 years in the northeast. In the south, where two-thirds of Brazil's food is produced, over 50% of the summer crops were destroyed in the states of Sao Paulo, Parana, Santa Catarina, and Rio Grande de Sul. Over half-million head of cattle died of dehydration and hunger, and over $6 billion of production was lost.

According to the *Gazeta Mercantil* of Jan. 23, 1986, the CFP company, which finances agriculture, projected that farmers in the south would lose an estimated 10 million tons of grains, including soy, corn, beans, cotton, and rice. Projections at that time predicted losses of up to 70% of the corn crop and 80% of the bean crop. The situation, which had become critical by the beginning of February, has been ameliorated by winter rains since early April, but 50-60% of the summer crops were lost, and the total loss in food production will be about 30%.

In addition to crop losses, water rationing was imposed in 52 cities, and electricity was rationed in 554 cities and towns. Most of the hydroelectric dams in the industrial area around Sao Paulo were operating at 15-20% of normal capacity. The Uruguay River, in fact, dried up. A total of 730 municipalities were affected, with 31 under emergency conditions due to "public calamity."

In the northeast, the traditional drought area, rainfall this year was 353% above normal. Most crops, roads, and bridges were swept away, and hundreds of people were killed. The only infrastructure that remained standing was the new railroad built between Gran Carajas and Sao Luis.

Disease strikes

The role of the International Monetary Fund and World Bank in aggravating conditions that allow for the spread of disease, was highlighted by the recent report that more than 200,000 settlers in the Brazilian Amazon have been struck by a highly virulent form of malaria. These settlers are part of a $500 million World Bank project to tear down the rainforest and have 500,000 settlers cultivate it by "appropriate technologies." As expected, the project has collapsed and pandemics are spreading. No health or sanitary facilities were built. The disease threatens to spread to Brazil's populated areas as sick or discouraged settlers carry it back to the cities.

When these refugees arrive they will swell the growing "marginal zones" of the major cities, such as Rio de Janeiro and Sao Paulo. These marginal zones have become characteristic of all urban areas in the developing sector and are characterized by high densities of population living under conditions of total lack of water, sanitary, and medical infrastructure. As of 1983, 60 million of Brazil's urban dwellers (67%) had no sanitation, and 13 million (14%) lacked safe water. For rural dwellers, 18 million (47%) had no safe water; while 1983 figures for sanitation were not available, in 1970, 33 million (76%) lacked it.

Typical of the conditions in these zones is the current outbreak of Dengue fever in Rio de Janeiro, which has affected over 20,000 people. Dengue, an infectious tropical disease, manifested by pains in the joints and back, fever,

and rash, originated in Africa. The Brazilian Dengue fever epidemic is centered in the Baixada Fluminense, a sprawling slum and industrial center populated by over 1 million people on the outskirts of Rio. Few of the houses have water or sewer connections.

The state health secretary said the Novo Iguacu epidemic is "just the tip of the iceberg," because the disease is "knocking on the door" of Rio and will spread to other cities. Dengue has spread to Guarulhos, a similar slum located at the edge of Sao Paulo at the point where trucks enter from Rio. The most fearsome aspect of Dengue is that it is spread by the mosquito, *Aedes aegypti*, the same variety of mosquito which carries urban yellow fever. The director of the Rio State Superintendency of Medical Campaigns, Pelagio Parigot, calculated that it would take five years to eradicate the mosquito. Fumigation with Malathion began in January, after four years in which mosquito control activities had been suspended in Brazil because of IMF asuterity conditionalities.

Sabotage of water infrastructure

To appreciate the fact that these are not just unfortunate, but unforeseeable, developments, it is necessary to know some of the history of approaches to the problems of water and sanitation in areas such as Brazil by such organizations as the WHO (World Health Organization). On Nov. 10, 1980, the United Nations inaugurated the International Water Supply and Sanitation Decade (1981-90) with the supposed goal of providing readily accessible, safe, reliable community sanitation and water supply by 1990. At that time, it was conservatively estimated that 1.5 billion people lacked access to safe water. This coincided with the adoption of "Health for All by the Year 2000" by the World Health Assembly (the directing authority of WHO). This goal was to be achieved by "primary health care," as defined by the 1978 WHO conference at Alma Ata in the U.S.S.R. Since water supply and sanitation are, by WHO and Unicef definition, a component of "primary health care" (minimal low-cost medical interventions), this meant that the same low-technology, non-capital-intensive approach would be used, i.e., no major capital investment in water or sanitary infrastructure would be made. As a result, 2.5-3 billion people now lack access to safe water.

As much of a farce as "primary health care" is, the real story is that, as far back as 1979, experts at the Rockefeller Foundation had decided that even this pathetic crust was too expensive to throw to all the beggars, and advocated "selective primary health care." In a paper presented at a meeting on Health and Population in Developing Countries, co-sponsored by the Ford Foundation at the notorious Bellagio Study and Conference Center, Kenneth Warren, M.D., of the Rockefeller Foundation, said: "What can be done to help alleviate a nearly unbroken cycle of exposure, disability and death? The best solution, of course, is comprehensive primary health care, defined at the World Health Organization conference held at Alma Ata in 1978. . . . The goal set at Alma Ata is above reproach, yet its very scope makes it unattainable because of the cost and numbers of trained personnel required. Indeed, the World Bank has estimated that it would cost billions of dollars to provide minimal, basic (not comprehensive) health services by the year 2000 to all the poor in developing countries."

Warren's proposal is a series of limited "high-yield," "cost-effective" interventions which leave the basic underlying problems undisturbed but would produce transient reductions in major diseases susceptible to relatively low-cost measures. Warren comments: "Proper sanitation and clean water make a substantial difference in the amount of disease in an area, *but the financial investment is enormous*. The success of such projects also depends on rigorous maintenance and alteration of engrained cultural habits." Indeed, but the payoff of such an investment would be the conversion of continents, such as Africa or Brazil, which are now breeding grounds for pandemic diseases, into major economic powers—something viewed by the WHO, and their Soviet hosts at Alma Ata, as less than desirable.

The basic premise underlying the WHO approach is that the populations of the developing countries are, in themselves, undesirable, and anything that would materially improve their existence, and thus increase their numbers, is anathema. There is little doubt that, historically, good water and sewer systems have preserved and extended more lives than all the physicians who have populated this planet. Thus the emphasis on "Clean your own latrine" sanitation, in the guise of primary health care, is a way of ensuring that the major water management projects needed to actually deal with the disease and famine rampant in the developing sector will not come into existence.

The Brazilian situation brings all of the issues of water supply, sanitation, water-related diseases, lack of agriculture water-management practices, desertification, and weather disruption together into one infernal cauldron which has the potential to ultimately degrade a great deal of the biosphere existing way beyond the borders of Brazil, or even South America.

Destruction of the rain-forest

Brazil produces close to 30% of its energy from biomass, and several countries such as Peru, Bolivia, and Ecuador have similar ratios. The result of these insane "appropriate technology" policies imposed by the U.N.-IMF-World Bank technocrats is the ecological holocaust taking place in Brazil right now.

The Amazon High (pressure) represents the world's crucial weather moderator, and controls the rest of the world's weather systems. A "high" weather system like Brazil's es-

sentially pumps gigantic amounts of water vapor up, like an inverted funnel (vortex), and circulates it around the world. The Amazon rain-forest is a very efficient "vapor-producing" machine, that sends gigantic amounts of humidity up into the atmosphere. The High, then, functions as a "steam engine," that drives the other major weather systems in the world. The energy produced by this heat exchange is immense. One small hurricane hitting the coast of Florida expends more energy than the United States produces in a year.

The Amazon High has shifted, and collapsed in size as a result of the destruction of part of this "vapor machine," the Amazon. Thermodynamically speaking, there has been an entropic collapse of the system, so that the energy throughput has been lowered. The Amazon rain-forest has been destroyed for the purpose of using wood, charcoal, and biomass for energy, slash-and-burn agricultural methods, and the burning of rain-forest for the creation of pastures for large cattle ranches owned by the European nobility.

The holocaust did not occur suddenly. Over the past 15 years or so, the summer season has become drier and drier. In areas where it used to rain 3-5 feet of water a year, only a few inches are falling now. The famous falls of Iguazu have so little water now, that one can walk from one end to the other. This is equivalent to Niagara Falls drying up. Conversely, areas such as the northeast, that used to have regular droughts, are drowning in rains pouring two to three times the normal amount of water.

Giant deserts are developing in areas where 10 years ago there was lush jungle. Minimally several million hectares have become desertified in the last few years, but the actual number is not known, and has probably been increasing exponentially.

The reason rain-forest becomes a desert quickly is that the volume of rainfall, amounting to several feet per year, leaches out all of the nutrients in the ground. The rain-forest, therefore,
differentiated "horizontally." As one enters the forest, small shrubs are encountered, then small trees, then tall trees. Pine trees will dominate certain areas, while maple and oak trees will dominate other areas.

A rain-forest is completely different. The differentiation is "vertical." There are five canopies of trees, each one with its own specializations. The forest floor is very clean, no leaves or rotting trunks, such as one finds in an American forest. Every nutrient is recycled immediately in a rain-forest, before it is washed away. If a leaf falls, insects and bacteria that live in a symbiotic relationship with the tree roots, will consume it immediately and recycle nutrients required for growth back up the canopy. Therefore it is correct to say the rain-forest "lives in the air."

Under primitive slash-and-burn agriculture methods, a tribe of Indians will move into a spot, burn a small area in a hilltop and cultivate it for two years, three at the most, before all of the nutrients have been exhausted and they have to move to another hilltop, a mile or two away. The rain-forest can quickly reclaim this small plot of land by creeping vines. With extensive slash-and-burn agriculture, however, the rain-forest cannot possibly reclaim the land. When one of the European nobles, who happen to own most of the land in Brazil and Venezuela, decides to turn his piece of the rain-forest into pasture land for cattle, thousands of hectares of forest will be burnt at once.

After five years, at most, the soil nutrients will be exhausted, and the nobleman goes off and burns another few thousand acres of forest for his cattle. The original area, however, is still receiving several feet of water a year, and every mineral is leached out until all that is left is laterite, an aluminum-silicon oxide that can support no vegetable life, and is harder than brick when it dries. This is how millions of hectares of desert have been created. Moreover, what is happening in many areas in Brazil is that these deserts are acquiring a "life of their own," and spreading to still-existing rain-forest in a way similar to the spread of the Sahel in Africa.

A second major method of turning lush rain-forest into desert is cutting down wood to make charcoal, and cultivation of sugar cane to make gasohol and bagasse. In this case the nutrients are taken away with the trees and the cane, so that again, nutrients are not replaced in the forest economy. The hypocritical charcoal companies can plant as many trees as they want, to replace those they have cut, but as they well know, those trees will not grow because there are no minerals and nutrients to feed on. Most important, it was a specific order of the IMF to Brazil that has forced that country to rely on charcoal to produce steel. Brazil produces very little coke, so that it has to import it, utilizing precious foreign exchange which the IMF wants used to pay debt.

Reversing the biological collapse

Even if the destruction of the rain-forest is stopped right now, it will take many years, possibly decades, for the weather system to return to "normal" again, if we simply allow "nature" to do the job. The best means to increase energy throughput in the biosphere is with massive agro-industrial development and enormous utilization of energy inputs, in the form of electricity, chemicals (fertilizers), and machinery (tractors, etc.). The crash development of nuclear power is imperative for both industrial production and to make up for shortfalls in hydroelectricity production caused by drought.

Key to any attempt to deal with the situation in Brazil, or Africa, or other similar areas in the developing sector, will be construction of large-scale sanitation infrastructure, and comprehensive insect eradication programs, *requiring the enormous financial investment* which the IMF, the World Health Organization, the World Bank, the Rockefeller Foundation, and others find so distressing.