

Editorial

HUMAN ECOLOGY AND HEALTH¹

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Rapid population growth, urbanization, and development in Latin America and the Caribbean threaten to create ecological imbalances relevant not only to aesthetics and economics but to human survival. The following remarks, delivered at the inauguration of the Pan American Center for Human Ecology and Health in Metepec, Mexico, describe these problems, measures needed to cope with them, and the Ecology Center's potential contribution to those measures.

The countries of the Americas are experiencing unprecedented demographic growth—at the same time as they are increasing the exploitation of their resources and maintaining technological development. In this vein, one of the most salient changes in the demographic evolution of the Americas—especially Latin America, where over half the people still live in rural areas—is the geographic redistribution of the population, a redistribution that probably foreshadows intense absolute demographic growth and a process of accelerated urbanization with marked concentration of the urban population in major cities.

This situation will create problems of uncertain magnitude, whose solution will require commensurate efforts by the health sector to organize sanitation and health care services capable of providing adequate coverage for a demand far in excess of what the sector must satisfy at present. The very magnitude of major cities' steady growth, especially in terms of population density and industrial development, creates problems of environmental deterioration that adversely affect human health and economic development and that upset the ecological balance in ways similar to those now being experienced in most of the highly industrialized countries. These problems are so complex that the ecological imbalance is capable of assuming critical importance, in terms not only of aesthetics and economics but of human survival.

The problems of environmental health in the developing countries are many and varied, ranging from acute gastrointestinal infections and chronic parasitic diseases to exposure to chemical contaminants. At the same time, all the world's countries are striving to develop their industrial capacity and to embark on large-scale projects of highway construction, land settlement, and development of resources—including water resources. There is reason to fear that these projects are producing changes in the physical environment profoundly affecting human health and giving rise to the sorts of problems associated with mobilization of large groups of people as a result of migration, settlement of new lands, and the more and more common phenomenon of urbanization referred to already.

Consequently, the displacement and resettlement of human populations has never

¹From an address delivered on 30 June 1980 at the ceremonies inaugurating the Pan American Center for Human Ecology and Health in Metepec, Mexico.

been as marked or vast as it is now, and the Governments of the Hemisphere are actively proceeding to prepare and implement population redistribution plans. Some of these plans relate to construction of dams, highways, and industrial complexes, while others relate to the urban planning process dealing with the social and employment-related attractions of the cities.

The physical changes brought about by a major undertaking, such as a hydroelectric or large-scale irrigation project, can affect flora and fauna over a wide geographic area and can have a great influence on vector-borne diseases. Such economic development projects can also adversely affect health by creating an influx of workers and their families into sparsely populated areas—where they are exposed to new diseases and to biological and ecological conditions distinct from those to which they were originally accustomed. In this regard, I should like to cite the commendable efforts being made by various Member Governments of the Pan American Health Organization to institutionalize programs for dealing with the environmental changes and health impacts resulting from the establishment of massive economic development projects such as the Yaciretá and Itaipú hydroelectric complexes in the Southern Cone of our continent.

Another aspect of environmental health that merits attention concerns the dumping of industrial wastes that are toxic and dangerous and that have a variety of adverse effects upon man and his environment. It should be stressed that the wastes referred to are deposited in such a manner that Nature is unable to neutralize and assimilate them.

The magnitude of the real and potential threat is apparent from the fact that close to 60,000 chemical products are now a regular part of daily life, and that more than a million are marketed every year. Standards capable of preventing health hazards have been established for less than 200 of these products. We do not even know the true risk posed by a majority of the chemical products accumulating in the environment. The half-life of many of these products exceeds 200 years.

Industrial development is also having recognized adverse effects on human populations. Agricultural workers are constantly exposed to pesticides, and the chemical contamination of foods is a problem of unknown magnitude in various countries.

Detecting the harmful effects of toxic and dangerous substances is a complex task requiring a systematic and prolonged effort. However, it is imperative to keep the developing countries from having to pay the high price paid by the industrialized countries.

The Pan American Center for Human Ecology and Health that we inaugurate today has an important role to play in the study of methods that can help governments establish systems for surveillance and early detection of health risks posed by chemical contamination of the environment. In this field the World Health Organization has already undertaken an international program to control the harmful effects of chemical products. This Center and Mexico's Under Secretariat for Environmental Improvement will participate in that program.

Increasing recognition is being given to the idea that industrialization ought to be accompanied by social, educational, and health programs. Government authorities and representatives affirm that their countries need technical cooperation—at times with the participation of international and bilateral credit agencies—in order to prepare appropriate studies and to evaluate the possible health and environmental consequences of development projects. Nevertheless, our experience has shown that the ministries of health have a relatively limited capacity for conducting the complicated studies required.

We believe that this need for technical cooperation is a subject that should be ad-

ressed by the Center for Human Ecology and Health. We also feel that this Center should perform the tasks of integrating and analyzing available information—so as to facilitate intersectoral linkages within the social systems involved—and of assessing the implications of the actions taken, whether in isolation or as part of a broader plan. We hope that the Center will provide assistance to the Governments of the Americas in studying the effects of economic development programs upon health, in formulating ecological strategies for controlling diseases, in assessing the health risks involved in environmental pollution, and in training national specialists. The Center will undertake to prepare guides for the identification of critical parameters and methods for the evaluation of effects on health in the hope that such materials will provide the Governments of the Americas with the information needed to initiate their own evaluation programs.

It is also important, in planning industrial development, to give due consideration to the relationship between technological and economic progress, on the one hand, and environmental values on the other. Deterioration of the environment and consequent damage to human health can only be prevented when reliable information on environmental consequences is available at the stage when development projects are formulated or, at the very least, before they are completed. Much of the technical and other information needed for proper planning that can avoid unfavorable environmental results is already available at various institutions around the world. The characteristics of industrial processes that produce noxious pollutants harmful to the environment and human health are well-known. Furthermore, studies have been made of measures able to prevent the damage that can be caused by these industrial processes. Much more information than is actually being used is available for taking preventive and corrective action. In some cases an adaptation to local conditions may be necessary; in others, appropriate studies and research should be used to improve preventive and corrective techniques. The Center should be able to render useful services to the countries of the Region by collecting, analyzing, and transferring this known information so that it can be applied in effective control programs.

The Ecology Center will also have an important role to play in the world program for establishment of environmental health criteria and standards. It should be able to contribute to this program and to serve as a base for program-related activities in the Americas. The Center should also obtain and analyze appropriate information and supply it to the countries of the Region in order that they may apply suitable criteria when establishing standards for environmental health programs—including programs for expansion of water supply services and basic sanitation.

In an analogous manner, the Ecology Center will serve as a regional base for the worldwide network conducting surveillance of environmental health conditions. In this role it can count on the collaboration and support of PAHO/WHO's network of Pan American centers and associated scientific and educational institutions. It is worth noting that the program activities of this Center are closely linked to those of the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) in Lima, Peru.

The Pan American Health Organization is deeply indebted to the Government of Mexico for encouraging and supporting the establishment, in this beautiful state of Mexico, of the Center for Human Ecology and Health. The spirit of initiative displayed by the Mexican Government should serve us all as an example of the effective role that international cooperation can play in establishing new technologies and criteria contributing to the attainment of our common objective, "Health for All by the Year 2000."