

## ENVIRONMENTAL HEALTH AND TECHNICAL COOPERATION AMONG DEVELOPING COUNTRIES<sup>1</sup>

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*The subject of technical cooperation between developing countries has attracted growing attention in recent years. The account presented here summarizes PAHO's efforts to promote such cooperation in the field of environmental health.*

### Introduction

The concept of *technical cooperation among developing countries* is adding a new dimension to international cooperation for economic growth and development. This concept, sometimes referred to as "TCDC," has been defined as "collective self-reliance and mutual support among developing countries" (1). Stated more fully, this definition becomes "the sharing of capacities and skills among developing countries—embracing programs, projects, and activities in which such inputs as know-how and expertise, consultant and subcontracting services, training facilities, equipment and supplies, and . . . information are provided by developing countries one to another."

The concept takes on added significance if we consider that during the next few decades billions of dollars will be invested in social, industrial, and resource development projects. If the experiences and, I might add, the mistakes of the highly industrialized nations are any indication, the rapidly developing nations will have to take steps to protect their societies from the preventable unwanted side-effects that technology and industrialization can bring. To

accomplish this, it will be necessary to further develop national technical capabilities and resources of a multidisciplinary nature.

The developing countries' potential for sharing their development capabilities has grown steadily in recent years. In fact, there are already potentials and capabilities which have not yet been recognized, utilized, and harnessed to the development process. TCDC is thus a mechanism which might make it possible for countries to attain economic independence and self-reliance through mutual endeavor and equal partnership. All nations of the international community—developing and developed countries alike—share this goal, along with the agencies of the United Nations system.

### International Organization Policies

In 1972 the United Nations General Assembly invited the United Nations Development Program (UNDP) to establish a working group on TCDC. This was followed by a series of regional intergovernmental meetings around the world which culminated in a resolution passed by the General Assembly in December 1976. This resolution designated a preparatory committee to organize a world conference on TCDC—a conference that will be held from 30 August to 12 September 1978 in Buenos Aires, Argentina.

The Governing Bodies of WHO (the World Health Assembly and the WHO

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Executive Board) and PAHO's Directing Council (the Regional Committee of WHO for the Americas) have followed up these actions by approving a resolution (EB57.50) inviting the Member Governments to give priority attention to TCDC in the health sector. This resolution includes a recommendation for expanded support to developing countries designed to help them achieve self-reliance—as part of a new international economic order and in keeping with the United Nations Program of Action.

PAHO has adopted this new concept of technical cooperation. Accordingly, it is reorienting its operations to include those activities that the Director-General of WHO has defined as

having a high degree of social relevance for Member States—in the sense that they are directed towards defining national health goals and . . . will contribute directly and significantly to the improvement of the health status of their populations—through methods they can apply now and at a cost they can afford now.

### The Current Outlook

One of the technical cooperation activities in the environmental health field that is being given priority attention is development of appropriate technology.

This is a complex matter, because despite the importance of technology for industrialization and economic development, only about one per cent of the world's original technology is being produced in the developing countries. Instead, the developing countries are relying almost exclusively on a transfer of technology from industrialized countries which is now costing them three to five billion dollars per year. If this trend continues, the cost may well reach 20 to 35 times this amount by the year 2000 (2). To reverse this trend, a concerted effort should be made to develop appropriate technology within the developing countries, as a complement to imported technology.

In addition, since the transfer of tech-

nology from advanced countries will continue, it will remain important to adapt this existing technology to the social, cultural, and economic conditions in the particular developing countries involved. However, even adaptation of existing technology may require commitment of considerable resources. In the case of water treatment and waste treatment systems, for example, under certain circumstances radical design and construction changes in these systems may be required. The transfer of known technology is also likely to require more than mere translation of books and manuals prepared in developed countries. The more advanced countries have to deal with a relatively narrow range of conditions, while developing countries have to deal with everything from complex urban environments to poorly developed rural societies and—in some cases—primitive tribal conditions. Under these circumstances, transfer of technology means continual adaptation and readaptation, even within different regions of the same country.

In seeking to develop appropriate technology, it should be remembered that man is not necessarily a technical animal. People must understand technology before they can reap the benefits which accrue from it. There are numerous cases where people—in many parts of the world—have been unable to make use of such facilities as water treatment plants, for example, because the technology was too complicated and could not be incorporated into the individual community's life-style. Technology should therefore be people-oriented, and, in activities relevant to health, every effort should be made to link health with economic productivity and community participation.

Application of the TCDC concept will assume considerable importance as preparations proceed for the Drinking Water and Sanitation Decade (1981-1990) proposed at the United Nations Conference on Water held in Mar del Plata, Argentina, in March 1977. That Conference reaffirmed the

recommendations of the UN Conference on Habitat that urged countries to provide water and sanitation services to as many people as possible by 1990.

This effort to provide adequate and safe water supplies and waste disposal systems will require substantial input from industrialized countries and international agencies. Those concerned must thus be encouraged to concentrate on using appropriate technology, as described above. In addition, consultants from industrialized countries should employ qualified experts and consulting firms available in the developing countries and should utilize locally produced materials and equipment wherever possible.

Another key factor in the success of this worldwide effort to extend water supply and sanitation services, and for that matter all environmental health programs, is manpower development. I refer both to short-term training of professionals and subprofessionals and to formal degree-level academic programs.

In this connection, the massive capital investment needed to provide water and sanitation services, among others, must be accompanied by a correspondingly massive effort to develop systems for delivery of ongoing training that will serve the expanding community sanitation services. Insofar as possible, such training systems should be located in the developing countries involved, so that the programs will be geared to local conditions. This approach will also make it possible to start building up local training institutions that might someday gain regional recognition and that could serve as training resources for other developing countries.

With regard to formal academic training, PAHO and the Inter-American Association of Sanitary Engineering (AIDIS) hope to initiate a review and possible updating of curricula for training in environmental engineering and related professions. This has not been done in the Region since 1962,

and sufficient developments have occurred in the environmental health field since then to warrant such action.

In the course of this review, we hope it will be possible to identify institutions in the Region that have the potential to develop into centers of excellence for specialized academic training. Hopefully, as these institutions evolve, the number of people going to industrialized countries for training may decline. Such local training is desirable in many cases, because it offers a way to avoid the kind of overly sophisticated training that results in dissatisfaction when the trained individual returns home, and that usually ends up producing one more "brain drain" statistic instead of technological advancement.

### PAHO Activities

At this point I would like to mention some specific environmental health activities of PAHO's Technical Cooperation Program that are directed at furthering the TCDC concept.

PAHO is seeking funds for support of a project to identify and strengthen various existing institutions in selected Hemisphere countries, in an effort to establish a network of specialized collaborating institutions. These focal institutions would work closely with two PAHO centers<sup>3</sup> in carrying out some or all of the following activities: (1) investigations to solve specific national or subregional problems; (2) training programs; (3) development of a regional network of information exchange centers; and (4) provision of technical assistance to the home countries involved and to other developing countries.

In seeking to identify potential collaborating institutions, PAHO will be utilizing the information assembled by the UNDP in

<sup>3</sup>The Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) and the Center for Human Ecology and Health (ECO).

its *Directory of Services for Technical Cooperation Among Developing Countries*, a document published in June 1977. This was the UNDP's first attempt to collect information on a global scale about capabilities and services available for bilateral or multilateral technical cooperation programs and projects between developing countries. It is expected that an updated version of this work will be published in late 1978.

PAHO has also prepared a project proposal for the Caribbean area—with assistance from the Canadian International Development Agency (CIDA)—that is entitled "Caribbean Basin Water Management." This proposal, if funded, will place major emphasis on the following:

- 1) Organization of a self-sustaining Eastern Caribbean Waterworks Training Delivery System that makes optimum use of appropriate existing institutions and technical expertise;
- 2) Education of technically trained individuals in the communications skills and instructional techniques they need to pass on their knowledge and experience; and
- 3) On-site development of appropriate performance-oriented training/job manuals and other instructional materials for the Eastern Caribbean territories.

The United Nations Environmental Program and the Government of Spain are jointly funding an International Center for Training and Education in Environmental Science for Spanish-speaking countries (CIFCA), which has been established in Madrid. Although initial training activities took place in Spain, it is expected that greater emphasis will be given to the Americas in 1978. Besides providing short courses, CIFCA is prepared to help selected universities develop graduate programs—both in environmental sciences and engineering and in human ecology and health. PAHO's task here is to help identify those institutions that have potential for development. Hopefully, this is another activity which can be undertaken jointly with AIDIS.

It is expected that a CEPIS<sup>4</sup> technical and scientific information system will become operational in 1978. A grant from the Canadian International Development Research Center (IDRC) for design and implementation of a Regional environmental information network is supporting this work. A principal function of the system will be to prepare and distribute a series of guides and manuals on water supply, pollution control, laboratory analysis, and techniques for collection, processing, and dissemination of information. The Center also plans to assist countries in establishing their own information facilities as part of a Regional network of collaborating centers for information exchange.

In addition, investigators at CEPIS are examining lower-cost wastewater treatment methods and simplified ways of sampling, analyzing, and measuring contaminants in the environment. These projects are being undertaken in close collaboration with institutions in various countries.

Another project will soon be initiated at CEPIS for the Technical Development of Water Supply and Sewerage Institutions. This work is being supported by the Government of Peru and the Inter-American Development Bank (IDB). Its aim is to develop training courses and materials, an information system, and a research program all focusing upon operation and maintenance of water supply and wastewater treatment facilities. The project is to run for three years. It is expected that the experience gained in Peru will be disseminated and applied in other countries of the Region.

The new Pan American Center for Human Ecology and Health (ECO) has begun operating from its headquarters in Mexico City. ECO will be cooperating with member countries in determining the environmental impact that large-scale de-

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<sup>4</sup>The Pan American Center for Sanitary Engineering and Environmental Services.

velopment projects will have on human health. The Center is not expected to undertake an in-house research or training program in the foreseeable future. Instead, ECO will serve as a catalyst promoting research and training in the countries of the Region. Its resources will be used to develop the countries' national assessment capabilities and to help institutions incorporate ecology into the curricula for students of medicine and other related disciplines concerned with environmental health.

### Concluding Remarks

I should like to conclude with a few comments about the forementioned TCDC Conference soon to be held in Buenos Aires. The results of this gathering should be awaited with great anticipation. I say this because even though most WHO member countries have supported the TCDC concept, as have the international agencies, some ingrained attitudes may still have to be overcome if the concept is to be fully developed. That is, it will require new attitudes on the part of governments and inter-

national agencies to overcome a variety of administrative, technical, political, and psychological barriers, of which the following are some examples:

- 1) Are countries prepared to accept less than optimum technical assistance to solve a particular problem?
- 2) Would a potential trainee be willing to accept a degree from a local institution instead of one from a prestigious university in an industrialized country?
- 3) How many countries would accept the development of a center of excellence in a neighboring country and then seek to utilize this resource instead of developing their own?
- 4) How many countries are prepared to accept materials, equipment, and contractor services from a developing country which may not be "the best source available?"
- 5) Are international organizations prepared to orient their activities away from technical assistance and toward technical cooperation in order to develop self-reliance and the administrative framework needed to make TCDC a functional undertaking?

The Buenos Aires Conference should provide important guidelines for dealing with these barriers, and should help in assessing the extent to which such barriers can indeed be overcome.

### SUMMARY

The concept of *technical cooperation among developing countries* is adding a new dimension to international cooperation. This concept, sometimes referred to by specialists as "TCDC," has been defined as "collective self-reliance and mutual support among developing countries."

In December 1976 the United Nations General Assembly called for a world conference on TCDC, a conference that will be held from 30 August to 12 September 1978 in Buenos Aires, Argentina. The concept has also been endorsed by PAHO and WHO, which have invited their Member Governments to give priority attention to TCDC in the health sector.

Within this evolving framework, PAHO's Technical Cooperation Program is preparing various specific actions in the field of environ-

mental health that will be directed at furthering TCDC. These include the following:

- A project to establish a network of specialized collaborating institutions in developing Hemisphere countries.
- A project for training water management personnel in the Caribbean.
- Establishment (by PAHO's Pan American Center for Sanitary Engineering and Environmental Sciences—CEPIS) of a technical and scientific information system.
- A CEPIS project to promote technical development of water supply and sewerage institutions.
- Continuing CEPIS research on low-cost wastewater treatment methods and simplified

ways of sampling, analyzing, and measuring environmental contaminants.

• Determination of the environmental impact of large-scale development projects. This work is to be carried out in collaboration with the Member Governments by ECO, PAHO's new

Pan American Center for Human Ecology and Health. ECO, which recently began operating from its headquarters in Mexico City, is expected to serve as a regional catalyst that will promote research and training activities.

#### REFERENCES

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