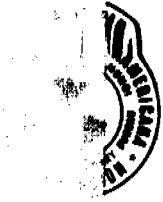


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# INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

REGIONAL PROGRESS REPORT



WASHINGTON D.C. - 1987

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-ENVIRONMENTAL HEALTH PROGRAM-



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## PROLOGUE

The year 1985 constitutes the midpoint of the Decade 1981-1990, a period during which the Governments of the countries of Latin America and the Caribbean were committed to make substantial improvements in the provision of drinking water services and disposal of wastewater and excreta in order, in turn, to contribute effectively to the development of the health and well-being of the population.

The International Drinking Water and Sanitation Decade, launched on 10 November 1980 by the General Assembly of the United Nations, constitutes an universal movement destined to promote urgent attention to the extension of coverage of safe water supply and sanitation services to the greatest number possible of inhabitants. This movement also specifies that priority be given to the less privileged population groups that lack these services such as those that live in the marginal sectors of the cities and in the rural areas. For this purpose it is necessary, among other things, to increase the efforts, to assign greater resources, to reduce costs, to utilize technologies more appropriate to the socioeconomic conditions, and to adopt new procedures that favor the goals sought. In the same way the companies and institutions that provide water supply and sanitation services will need to improve their efficiency, especially in their management of the operation and maintenance of the installations.

For the Region of the Americas this Decade constitutes a third effort with political connotations directed toward joint action by the countries. The first was the agreement of the Charter of Punta del Este, made in Uruguay in 1961, and the second the Meeting of Ministers of Health held in Santiago, Chile, in 1973. On those two occasions goals for the scope of the water and sanitation services in the countries of the Region were defined.

Under these commitments the countries of Latin America and the Caribbean made substantial advances toward the development of these services, in extension of coverage and in the improvement of the national capacities to deal with these tasks. For the Region of the Americas in the Decade of the 80s substantial achievements were attained, leading to the expectation of worthwhile developments; however, during this period there were very acute economic crisis that affected the countries, hurting their programs.

The Environmental Health Program of PAHO considered it appropriate that in 1985 the Governing Bodies of the Organization review the progress in the Region during the Decade in order to determine the advances, the restrictive aspects, and the general situation in the subsector. In this light the action to be developed in the next five years would be better directed. This purpose led to the preparation of the document "International Drinking Water Supply and Sanitation Decade - Progress Report on Work in the Region," that permitted us to present, after analyzing the report, the Resolution that was subsequently approved at the XXII Pan American Sanitary Conference in Washington in September 1986.

The achievement to be attained in the period 1986-1991 will result in great measure from the efforts, initiatives, and dedication of the personnel that lead and act in all the institutions that have responsibilities in this field, using the limited resources and

available knowledge. Such action will lead to the political decision so necessary for the promotion of the national programs. On this personnel rests the important responsibility of directing the levels of government to create an environment favoring the political decision-making that would govern the future development of the Decade.

As part of the review of progress during the Decade, the Program also recommended that the countries review the progress at the national level in order to determine its scope and plan future action. Several countries have carried out this activity. For those that still have not, we suggest that they consider doing so, since these initiatives will contribute importantly to motivating the country to act.

We urge all those involved in the development of water supply and sanitation services at the national and international levels to strongly support the second half of the Decade.

**Guillermo H. Dávila,  
Program Coordinator  
Environmental Health**

### **NOTE**

This report was presented to the XXII Pan American Sanitary Conference to advise of the progress made at the midpoint of the International Drinking Water and Sanitation Decade. The document analyzes the data from 26 countries of the Americas on progress they made during the first five years of the Decade. It shows the reasons why there was slow progress toward reaching the targets proposed by the countries. The report highlights the population growth and movements emphasizing the accelerated increase of the urban poor population groups and the economic crisis confronting the Region. Some of the important areas of PAHO activities, past and future technical cooperation in support of the countries efforts to reach the Decade goals, are also presented.

The Pan American Sanitary Conference revised the report and approved Resolution XVI.



## **RESOLUTION**





## **RESOLUTION XVI**

### **INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE REGIONAL PROGRESS**

THE XXII PAN AMERICAN SANITARY CONFERENCE,

Having seen the document presented by the Director on the International Drinking Water Supply and Sanitation Decade (1981- 1990) - Regional Progress;

Recalling Resolution XXII of the XXVI Meeting of the Directing Council of PAHO (1979) and Resolutions WHA36.13 (1983) and WHA39.20 (1986) on the Decade, in which it is recognized that drinking water supplies and sanitation are essential to the success of the strategy of Health for All by the Year 2000 and that the Decade assigns priority to marginal urban and low-income rural populations;

Noting the efforts made by the Governments, the degree of external support, and the progress made by the Decade program to date;

Noting further the need to change the trends of coverage seen in the first half of the Decade, which indicate that several countries in the Region will be unable to reach the goals they have set for themselves, and that special efforts will be required if more progress is to be made in the final five years; and

Taking into account the recommendations in the report of the Director in regard to the participation of health authorities in drinking water supply and sanitation programs through intersectoral collaboration, and for effective cooperation with external cooperation agencies,

#### **RESOLVES:**

1. To urge the Member Countries:
  - a) To make a greater political commitment to attainment of the goals of the Decade, including incorporation of their national water supply and sanitation plans in their national economic and social development plans;
  - b) To improve water quality, including fluoridation, and to extend the coverage of sewer and excreta disposal services to levels comparable to those of water supply services;
  - c) To promote and support the provision of drinking water and sanitation as essential components of primary health care;
  - d) To ensure intersectoral collaboration and coordination among national entities, international organizations and bilateral agencies and other participants in the Decade in order to optimize efforts;

- e) To foster the administrative and technical development of the institutions responsible for water supply and sanitation services, including their human resources, so that they may carry out the functions of planning, execution and, in particular, operation, maintenance and rehabilitation of the services;
  - f) To promote the control of losses and the efficient use of water in integration with institutional development so as to optimize the use of installed capacity and extend the drinking water supply systems to serve the largest possible proportion of the population;
  - g) To ensure the participation of the community, and especially of women, in all stages—the planning, building, management, operation and maintenance—of the development of these services;
  - h) To identify and mobilize on a large scale the national and local financial, human, technical and administrative resources by means of innovative strategies so as to reduce costs.
2. To urge the international cooperation and financing agencies:
- a) To continue giving high priority to drinking water supplies and sanitation, and to increase the proportion of the funds they allocate for the financing of services, especially for the urban and rural poor;
  - b) To increase the proportion of the funds they allocate to institutional and manpower development, to operation, maintenance and rehabilitation, to public information, to sanitary education, and to community participation;
  - c) To continue their efforts to improve coordination and exchanges of information at the country and regional level with national establishments and other interested external agencies.
3. To request the Director:
- a) To continue supporting the countries in the development of their programs on the Decade, with special emphasis on intersectoral coordination and action with other external agencies;
  - b) To continue supporting the promotion of research in the health aspects of drinking water supply and sanitation programs and in the use of these services as well as in the development of low-cost technology;
  - c) To continue supporting the development of drinking water supply and sanitation institutions, including their human resources, and in particular to promote and support efforts to make more efficient use of the installed capacity of drinking water supply systems;
  - d) To continue supporting the development of Decade programs in the countries with a subregional approach that reinforces the national effort;

- e) To publicize the experiences of the countries in community participation, the mobilization of resources, appropriate technology, operation and maintenance, and other important aspects, and to encourage exchanges of information;
- f) To continue monitoring progress in drinking water supplies and sanitation and give support in strengthening the management information systems of the countries.

(Approved at the ninth plenary session, 26 September 1986)



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## I. INTRODUCTION

The International Drinking Water Supply and Sanitation Decade (IDWSSD) (1981-1990) was proclaimed on 10 November 1980 by Resolution 35/18 of the United Nations General Assembly.

This resolution was the culmination of the process initiated at the United Nations Conference on Human Settlements: *HABITAT, Vancouver 1976*, to ensure provision of safe water and sanitation for all people without those services. The United Nations Conference on Water (Resolution II), held in Mar del Plata, Argentina, in 1977, set the goal of providing water and sanitation service to the entire population of the world by 1990, if possible, and called for a concerted effort of the governments and the international community to ensure a reliable drinking water supply and provide basic sanitary facilities to all urban and rural communities. It also indicated that "priority should be given to rural areas and urban-fringes populated by low-income groups."

The World Health Assembly resolved in 1977 that the social goal of the governments and of the Organization in the decades ahead would have to be attainment by all the inhabitants of the world of a level of health that will enable them to live a socially and economically productive life, thus setting the goal of "Health for All By The Year 2000." In 1979, recognizing the importance of the targets set at Mar del Plata, in Resolution WHA32.11 the World Health Assembly urged Member States to give high priority to the provision of water supply and sanitation in national development plans, bearing in mind that these services are essential for the attainment of the goal.

The Regional Strategy for achieving HFA/2000 incorporates the IDWSSD targets and establishes global indicators for monitoring and evaluating progress toward these goals, recognizes the need for intersectoral action for health, and places emphasis on the role of the individual, the family and the community.

The PAHO Medium-term Program in Environmental Health (1984-1989) gives the highest priority to the Decade under program component II, Water Supply and Sewage and Excreta Disposal (see Annex).

### 1.1 *The Decade's Focus: Underserved Populations*

The new approach of the Decade designed by WHO recognizes biases and shortcomings in national plans and programs and in the support provided by the international community. Many of these shortcomings are common to other sectors and stem from unbalanced policies for overall development; some are symptoms of more fundamental problems.

The approach comprises, at the national level:

- 1) *complementary sanitation and water supply development;*
- 2) *strategies that give precedence to underserved populations, both rural and urban;*

## 2 *Regional Progress Report*

- 3) programs that will serve as a model for self-reliant, self-sustaining action;
- 4) use of socially relevant systems that people can afford;
- 5) association of communities in all stages of projects;
- 6) coordination of water supply and sanitation programs with those in other sectors; and
- 7) association of water supply and sanitation with other health improvement.

At the international level, emphasis is placed on:

- 1) Promoting and supporting national programs for the Decade through technical cooperation;
- 2) concentrating technical cooperation on building up national capacities and generating dynamic, self-sustaining programs;
- 3) promoting technical cooperation among developing countries; and
- 4) encouraging the external financing of the national Decade activities.

The approach is closely linked to that of primary health care (PHC). The attainment of the Decade's targets and the success of PHC have many common conditions. The Decade may be a spearhead of primary health care; it is part of the wide range of community and rural development activities with which primary health care is inextricably linked.

## II. THE WATER SUPPLY AND SANITATION SECTOR DEVELOPMENT (1961-1980)

### 2.1 *Extension of Coverage (1961-1980)*

In 1961, the Governments of Latin America and the Caribbean under the Charter of Punta del Este committed themselves to providing water and sewerage services to 70% of the urban population and 50% of the rural population by 1971.

In 1972 the Ministers of Health of the Americas reviewed the progress made up to 1971 and established new goals for the 1970s in the Ten-Year Health Plan for the Americas. In summary form, these were: a) to provide water through house connections to 80% of the urban population and sewerage to 70%; and b) to extend water supply and sewerage or excreta disposal services to 50% of the rural population.

Assessed on the basis of the information provided in 31 December 1980 by 26 countries with a total population of 345 million (approximately 97% of the population of Latin America and the Caribbean) (Table 1), as part of the WHO monitoring effort for the IDWSSD, the progress made in the 1960s and 1970s was significant (Figure 1).

In 1980, base year for the Decade, of the 224 million estimated urban population, 186 million (83%) had drinking water through house connections or public standpipes and 132 million (59%) had sewerage or basic sanitation services. Of the 121 million rural population, 49 million (40%) had access to drinking water, while 13 million (11%) had basic sanitation services. The coverage increased considerably, but except for urban water supply the targets were not fully met.

## *2.2 Investments Made (1961-1980)*

During the period 1961-1980 more than US\$10.4 billion was invested in water supply and sewerage projects (Table 2). Of this figure, about \$2.6 billion was invested in the 1960s and \$7.8 billion in the 1970s. In general terms, the investments in projects with external financing in the 1970s were around three times more than in the 1960s in current values. External sources constituted 35% of the total investments for the period 1961-1971 and about 20% for 1972-1980.

## *2.3 Other Achievements (1961-1980)*

Other important achievements in 1961-1980 include: the general acknowledgement that consumers ought to pay for drinking water service; the passing of legislation assigning institutional responsibilities for water and sanitation services; the development of institutions and their improvement; and the increase in the availability of funds both from external sources and through internal mechanisms of the countries for initiating or continuing projects.

## *2.4 Constraints that Affected Development*

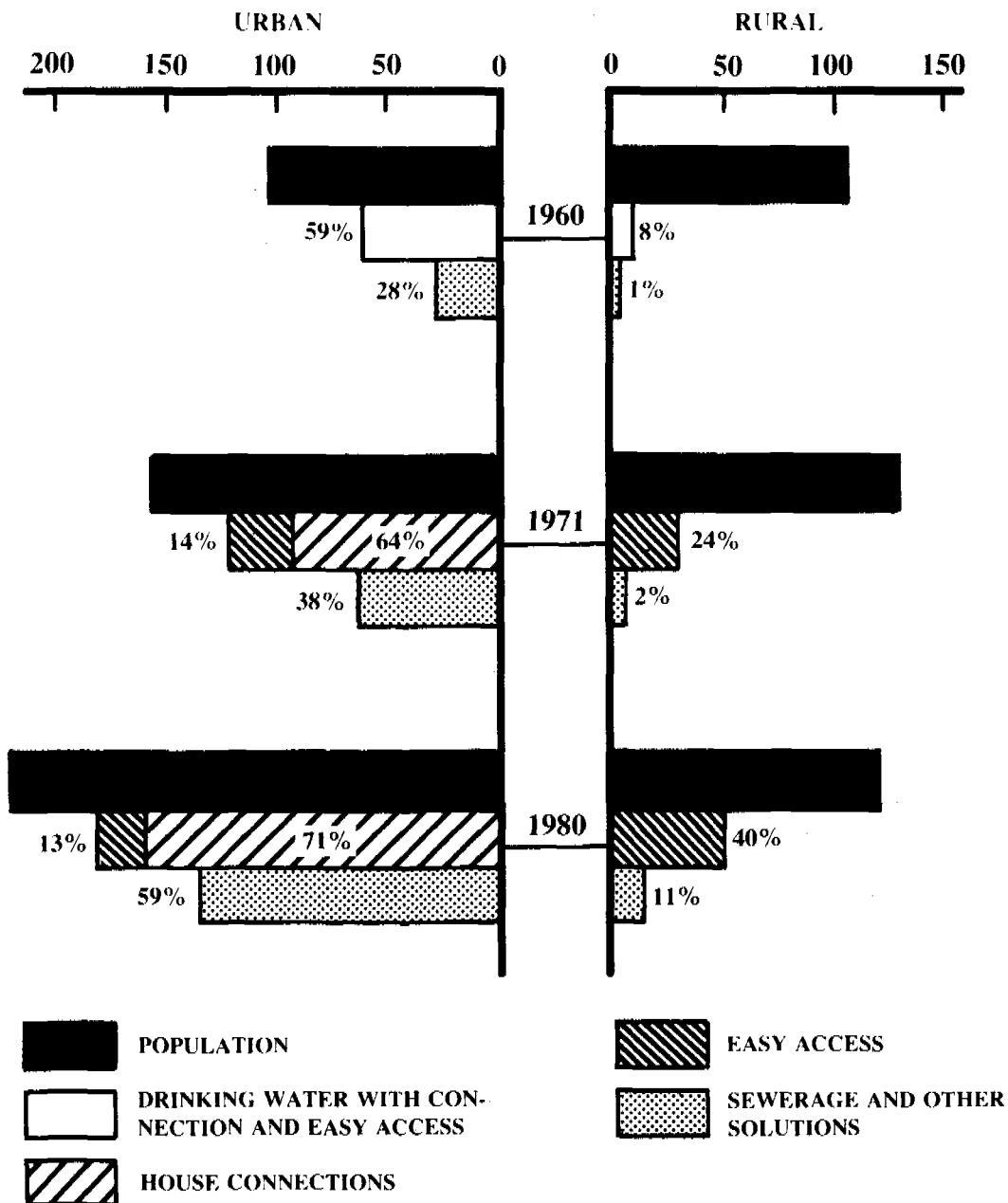
The progress made by the countries between 1961 and 1980 can truly be qualified as outstanding, even though the targets set for the 1960s and 1970s were not fully met. The reasons why these targets were not met have been examined by the countries themselves, by the international and bilateral agencies, and in 1979 by the governments of the Region at the XXVI Meeting of the Directing Council of the Pan American Health Organization, when formulating and recommending Strategies for the Extension and Improvement of Drinking Water Supply and Excreta Disposal Services for the 1980s.

A summary of the main constraints that prevented faster progress include among others the following:

- Lack of awareness on the part of the population regarding the relationship between deficient water and sanitation and disease, and unforceful expression of their needs and aspirations in this respect.
- Insufficient knowledge, understanding and motivation among the political and administrative levels regarding the socioeconomic importance of drinking water, sanitary sewerage and excreta disposal.
- Limited infrastructure and legal frameworks for carrying out faster and more efficient water supply, sewerage and excreta disposal programs.

URBAN AND RURAL POPULATION WITH DRINKING WATER AND SEWERAGE SERVICE IN LATIN AMERICA AND THE CARIBBEAN 1960, 1971 & 1980\*

FIGURE NO. 1



\*The 1980 Data were provided by 26 countries and form the Data Base for the Decade 1981-1990. (The information has been updated with additional data provided in 1983 and 1985.)

- Inadequate financial policies for the water and sanitation sector in general, and especially as regards the provision of services to low-income urban areas and the rural population.
- Fragmentation of responsibilities among a number of institutions and lack of coordination among them.
- Frequent management weakness, and lack of effective institution-building programs, including human resources development and the control of water losses.
- The frequent use of costly technologies that are not always suited to local social, economic and cultural conditions, particularly in the low-income urban areas and the rural areas.

### III. THE INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE (1981-1990)

For Latin America and the Caribbean, the International Drinking Water Supply and Sanitation Decade constitutes a third water decade. The goals recommended are the most ambitious stated to date: *“to provide all people with water of safe quality in adequate quantity and basic sanitary facilities by 1990, if possible, according priority to the poor and less privileged.”*

#### 3.1 National Targets for the IDWSSD (1981-1990)

In 1980, as part of the WHO Global Decade Monitoring Program, 25 countries of Latin America and the Caribbean, representing about 97% of the total population, set national targets for the Decade. Targets were adjusted in 1983 and in 1985. Table 3 presents targets country by country and the population that would have to be served to reach them.

In summary the targets are to:

- Provide safe drinking water to 91% of the urban population—85% through house connections and 6% through easy access;
- Provide safe drinking water to 56% of the rural population through house connections and/or through easy access;
- Provide sewerage or excreta disposal services to 69% of the urban population;
- Provide sewerage services or disposition of excreta to 31% of the rural population.

The targets imply that during the Decade the countries will need to provide water supplies to 99 million people and sewerage or sanitary excreta disposal to 85 million in the urban areas. In the rural areas, water will have to be provided to 21 million and sewerage or excreta disposal to 26 million (Table 4).

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### 3.2 *Cost of the IDWSSD*

On the basis of the unit per capita costs and targets established by the countries in 1980, and revised in 1985 (Tables 5 and 6), the cost of constructing new facilities to extend the coverage as proposed has been estimated at US\$30.113 billion, in 1985 prices—\$17.593 billion for water supply and \$12.520 billion for sewage and excreta disposal. Of the \$30.113 billion, \$27.029 billion (90%) would go to the urban areas and \$3.084 billion (10%) to the rural areas.

An aspect not included in the cost estimates of the Decade, due to lack of information, is the upgrading of operation, maintenance and rehabilitation of existing systems, or of the new systems being built. In general it is estimated that the recurrent costs may be between five and 20% of the fixed costs. An idea of the magnitude of the task can be gained from the number of instalations. As of 30 September 1984, a total of 5,550 water systems in 6,119 communities and 346 sewerage systems in 371 communities had been completed with the assistance of IDB loans (1961 to 1984). These figures, which are estimated to be a fraction of the total number of instalations, may suggest the magnitude of the task of operating, maintaining and rehabilitating the systems.

### 3.3 *Achievements to Date (First Five Years of the IDWSSD)*

#### 3.3.1 *Extension of Water Supply and Sanitation Coverage (1981-1985)*

Information to assess the progress made on the extension of coverage up to 1985 has been provided by the Member Countries.

The levels of coverage reached in the five years of the Decade in the 26 countries that provided information as of December 1985 are shown on Table 7.\* Figure 2 summarizes graphically the progress made. In the five years under review, the urban population served with water rose from 186 million in 1980 (83%) to 226 million in 1985 (86%), and sewerage services and individual sanitation facilities increased coverage from 132 million in 1980 (59%) to 156 million in 1985 (60%). Rural water supply was extended from 49 million (40%) to 55 million (45%) and rural sanitation services reached 15% coverage. Especially noteworthy is the increase in population served through house connections in urban areas, from 158 million in 1980 (71%) to 196 million (75%) in 1985 with a small increase in easy access.

Although progress was made regionally, great differences exist among countries (see Table 7 for individual country results). An analysis of progress between 1980 and 1985 shows that, of the 25 countries that have set urban water goals for 1990, 11 appeared to be well on their way to attaining them and 4 more had a reasonable chance of meeting their goals, and 10 needed to greatly increase their efforts if they are to meet their goals.

\* In the few cases where no information has been provided for 1985, 1983 data has been used as noted in Table 7. Since there are inconsistencies in the information provided, both for the base year 1980 and for 1985, as these are resolved the conclusion may need to be revised.

By 1985, of the 24 countries that set rural water supply goals, 12 seemed to be well on their way or had a reasonable chance to attain their goals, and 12 needed to greatly increase their efforts if they are to meet their goals.

In general terms, it can be said that the progress made in extension of coverage in the first five years of the Decade (1981-1985) has been lower than expected. The increase in urban water supply of about 3% per five years, if maintained, would be insufficient to meet the target for 1990 (91%). As regards achieving the urban sanitation target, the 1% increase in five years means that continuation of this rate could lead to a 61% coverage instead of the proposed 69% (an increase of 8% in the five remaining years would be required). The rural water supply coverage increase in the five years will have to be 11% to reach the target. For rural sanitation, an increase of 16% is required. In general, the rate in progress of the first five years of the Decade, in percentages, compared with that made on the average in five years of the 1970 Decade are significantly lower.

### 3.3.2 *Decade Investment (1981-1985)*

Table 8 sets forth the financing provided by IDB and IBRD (which is estimated to represent about 90% of the external funds going to the sector), together with the matching funds for loans, furnished by the governments, for the period 1981-1985. The total investment from international sources was US\$2.2 billion, and the national matching funds, US\$2.8 billion, for a total of US\$5.0 billion in the five years.

As far as national funds is concerned, there is no information aside from that provided as counterpart funds to external loans (1981-1985), as shown in Table 8 (US\$2.8 billion). Assuming that national investments, including counterpart funds, are about 70% of the total investment (30% external, 70% national) the possible total investment for the five years would be US\$7.3 billion. Should this estimate be approximately correct, the shortfall in external investments would be about US\$1.5 billion per year, and approximately US\$3.0 billion in national investments per year. In other words, the total investments in the next five years should be US\$22.5 billion in order to reach the targets.

International funding in the first five years of the Decade, was about US\$2.2 billion or some US\$440 million on the average (Table 8). This value, compared with US\$332 million per year in the period 1977-1980, is higher in current values. However, considering inflation there would be about equal. Similarly national investment can not be expected to have increased significantly.

### 3.3.3 *Specific Actions*

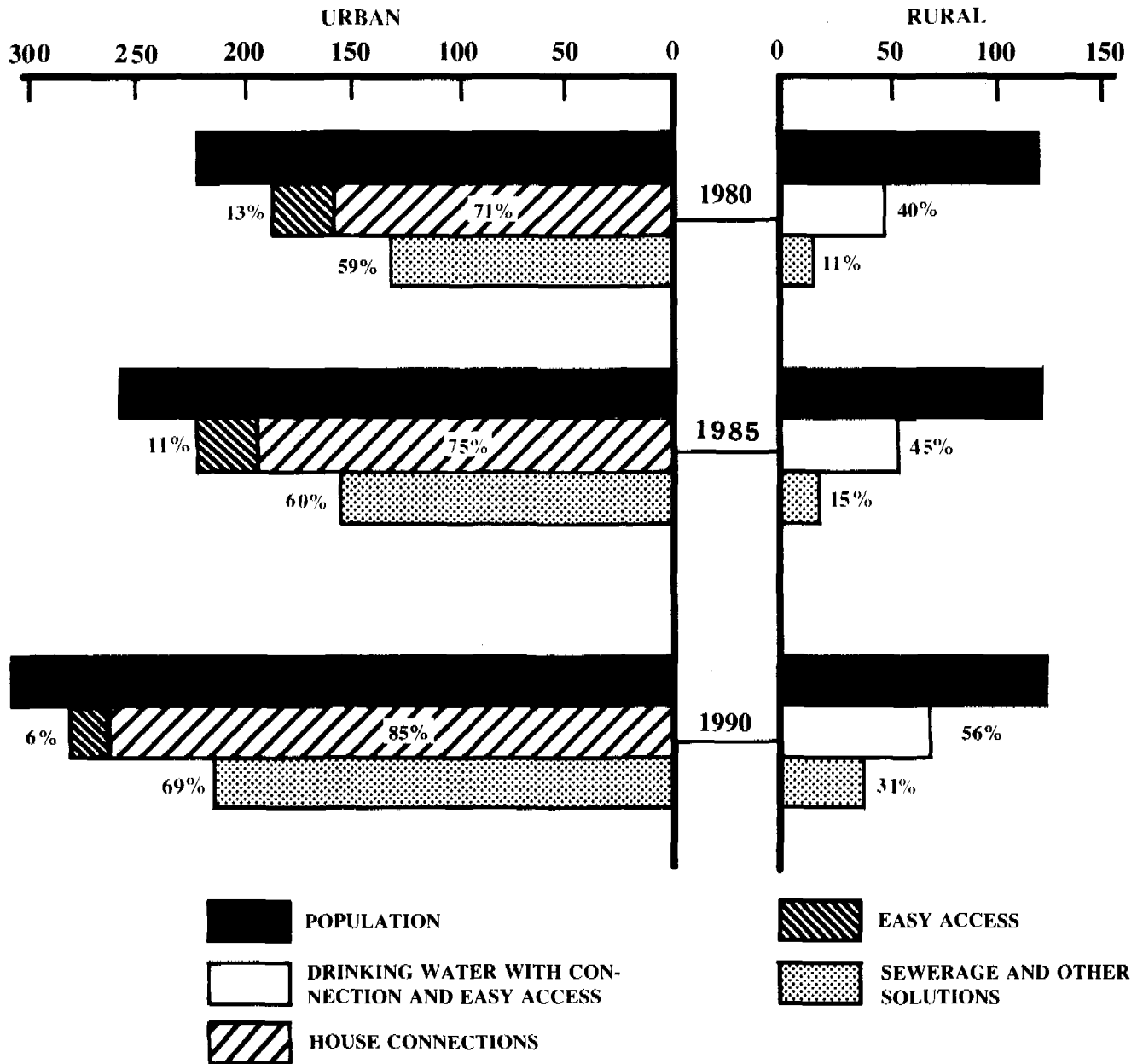
Decade activities actually started in 1978. The following are examples that may illustrate action, at country, regional and global level, of interest to PAHO Member States:

#### *At National and Subregional Level*

- In 1978 and 1979 in preparation for the Decade rapid assessments were made of the water supply and sanitation situation in 17 countries, sector studies were completed in 17 countries within the framework of the PAHO/WHO/World Bank

URBAN AND RURAL POPULATION WITH DRINKING WATER AND SEWERAGE SERVICE IN LATIN AMERICA AND THE CARIBBEAN 1980, 1985 AND TARGETS SET FOR 1990

FIGURE NO. 2



Note: The information on 1980 and 1990 provided by 26 countries has been updated with new data made available in 1983 and 1985.



Cooperative Program, and baseline data for the Decade were prepared by the 26 countries. Eleven countries prepared sector summaries for information of the external finance agencies.

- In 1980, 25 countries established national targets for the Decade and 15 countries organized national action committees for the Decade. In addition technical support committees have been established in seven countries.
- Under the agreement between the Technical Cooperation Agency of the Federal Republic of Germany (GTZ) and PAHO/WHO, Bolivia, Haiti, Paraguay, Honduras and Peru have formulated national plans for the Decade. With their own resources, Brazil, El Salvador and Guatemala have also completed National Decade Plans.
- Seventy-four national water supply and sanitation projects and four subregional projects have been identified as part of the Central American Priority Health Needs Plan, and 10 have already been financed.
- The directors and managers of the water and sanitation agencies and authorities of the Central American countries, Panama and the Dominican Republic have formed an association to enable them to focus jointly on solving the sector's common problems. This association's first activity is a project to improve the operation and maintenance of the water supply and sanitation services, with special emphasis on personnel training and the establishment of permanent national training systems. It was started early in 1984, with technical and financial assistance from GTZ and PAHO.
- With the collaboration of the Canadian International Assistance Agency (CIDA) and PAHO, a training delivery system was organized with the participation of 11 Caribbean countries.

*At Regional Level*

- The XXVI Meeting of the PAHO Directing Council, held in 1979, examined and approved the Strategies for the Extension and Improvement of Drinking Water Supply and Sanitation Services for the 1980s. The strategies relating to the national activities encompass policy, management, human resources, technology and funding. Resolution XXII urged Member Governments to extend the water supply and sanitation services, and requested PAHO to continue giving high priority to cooperating with Member Governments in strengthening their urban and rural water supply and sewage programs.
- The deliberations of the XVII Congress of the Inter-American Association of Sanitary Engineers (AIDIS) held in La Paz, Bolivia, in December 1980, focused on the Decade and on the problems of Latin America and the Caribbean. The XVIII Congress of AIDIS, held in Panama City in 1982, made recommendations in the context of its central topic regarding priority aspects for achieving the Decade's targets, including human and other resources, the planning of works and appropriate technology.

- The official launching of the Decade in the Region was in May 1981, during the period of sessions of the Economic Commission for Latin America (ECLA), held in Montevideo, Uruguay. This event was of special importance because it took place in the forum of the Ministries of Planning and Finance of the countries of the Region.
- ECLA, in cooperation with PAHO/WHO, organized two workshops on Horizontal Cooperation for the Decade, one in Santiago, Chile, in March 1981, and the second, in Santo Domingo, Dominican Republic, in January 1982. The purpose of these meetings was to produce criteria, mechanisms and proposals for horizontal cooperation among the countries of the Region in order to promote the Decade activities.
- PAHO organized a regional symposium on human resources for the Decade in Panama in August 1982. This meeting served as the basis for the planning and execution of human resources development programs for the Decade at national, subregional and regional level.
- To examine approaches and solutions to the institutional, economic, technical and social constraints in the provision of water supply and sanitation services to urban fringe areas, PAHO held a Regional Symposium on the subject in Santiago, Chile, in November 1984. One hundred and five participants from 20 countries attended the Symposium.
- IDB and PAHO amplified and extended their joint technical cooperation agreement with the common objective of accelerating project preparation for external financing and to strengthen the installed capacity of the national institutions for project execution. The World Bank, through the Economic Development Institute, and PAHO collaborated in training of professionals through several project planning seminars conducted in various countries.
- The United States Agency for International Development (USAID) is currently sponsoring a project called "Water and Sanitation for Health" (WASH), under which that agency has carried on a wide range of water and sanitation efforts in the Region. These have included such diverse activities as: assisting handpump programs in the Dominican Republic; designing a scheme for the drinking water and basic sanitation systems in the small villages of Honduras; participating in evaluation of rural water programs in Ecuador; and helping to strengthen training activities in Guatemala and Bolivia.
- UNDP has the responsibility for the overall coordination of the Decade activities. Technical cooperation projects were implemented in El Salvador, Guatemala, and Trinidad and Tobago to assist these countries in the planning and implementation of water programs. A project executed by the United Nations Technical Cooperation Department (UNTCO) provided several Caribbean countries with technical assistance for assessment of the water resources and development of water and sanitation activities.

- UNDP also sponsored the interregional project for the development and implementation of low-cost sanitation projects, executed by the World Bank. The Project Technical Advisory Group (TAG) studied the technical and economic implication of low-cost water supply and sanitation options such as handpumps and simplified sewer systems. The TAG assisted specific projects in Brazil, the Dominican Republic and Bolivia. Considerable diffusion of information was also carried on by the project.
- UNICEF has been very influential in the improvement of rural and school sanitation by providing several countries with equipment, supplies and technical assistance for the development of these programs. Cuba, the Eastern Caribbean, Guatemala, Guyana, Haiti, and Honduras benefitted from several projects financed by this Agency, from the regular budget or through special funds.
- PAHO, in collaboration with the Caribbean Development Bank (CDB) and the Jamaica National Action Committee, sponsored a consultative meeting of donor agencies and Caribbean countries to address the problems associated with the allocation of adequate funding for water and sanitation projects in most Caribbean countries, and to facilitate development in the sector. An inventory of all projects needing financing in the Caribbean was also carried out in connection with this meeting.
- The PAHO program for administrative and technical strengthening of the sector institutions to enable them to make more efficient use of their installed capacity, and of the resources that may become available, was intensified. During the first five years of the Decade, PAHO provided technical cooperation to eight countries for the implementation of institutional development programs, at a cost of about US\$13.00 million (mostly from extrabudgetary sources).
- The main efforts in human resources development have been to improve institutional performance through the development of the human resources. Two subregional projects mentioned earlier, involving 18 countries and four national projects, are at various stages of development. The internal training capacity of the national institutions is being strengthened with the aim of institutionalizing the function of human resources development. Attention is being given to the improvement of the teaching of sanitary and environmental engineering. In this context, PAHO has collaborated in the establishment of new schools of sanitary engineering in two countries and the upgrading of the curricula of existing courses in four institutions, including the development of collaborative twinning arrangement involving eight universities.
- PAHO's Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) intensified its trainers-training program, especially in respect of the Decade. The Center is strengthening the development of the Pan American Network for Information and Documentation in Sanitary Engineering and Environmental Sciences (REPIDISCA), which presently has 129 collaborating centers in 15 countries. CEPIS has also concentrated its efforts on the development of technology, research, training, transfer of information and technical cooperation, specifically for the extension of coverage in peri-urban areas and in the reduction and control of water losses, in the reuse of treated sewage, in the development of new

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techniques for treatment of drinking water and sewage and the improvement of water quality. PAHO's Pan American Center for Human Ecology and Health (ECO) cooperates with Member Countries in identifying and controlling water pollution problems of chemical origin.

### *At Global Level*

- At the beginning of the Decade, 10 United Nations agencies formed a Steering Committee for the Decade with the purpose of coordinating actions to optimize the agencies' participation in support of the measures and programs at country level. The World Health Organization acts as Secretariat. The Committee has formulated strategies in the areas of human resources, information, and others. It has also promoted and organized consultative meetings with the financial agencies and international and bilateral donors interested in the Decade.

### 3.4 *The Remaining Task*

The effort needed between 1985 and 1990 to reach the Decade targets means providing drinking water services to some 58 million more people in the urban areas and 15 million in the rural areas. In addition, sanitation services for 61 million urban and 21 million rural inhabitants are needed.

On analyzing the goals of the Decade in the light of the constraints existing in 1981, it was evident that it would be very difficult to reach the targets proposed using traditional models and practice. In 1985 many of the identified constraints still need to be resolved, and new approaches remain to be implemented. In addition, since then two factors have gained importance: first, the persistent economic crisis in the countries of the Region, related largely to their external debt, has resulted in a concentration of the limited external funds in what are considered the directly "productive sectors," rather than in the social sectors. Similarly, national funds may also be directed to the productive sectors limiting in some cases counterpart funds to external loans. This situation means that, in general, less funds may be available for the sector. Secondly, the majority of the population without service is in the urban areas and is increasing at a very rapid rate. In 1985, 14 out of 22 countries had an urban population of more than 50%. By the year 2000 all, but one country, will reach that level of urbanization. The greatest growth is in the urban slums of large cities, where it is currently estimated that 40% of the urban population lives, and 40 million more will be added in the next 10 years.

### 3.5 *The Role of PAHO/WHO*

The strength of PAHO/WHO's participation in the Decade rests at the country level and its longstanding involvement in water supply and waste water and excreta disposal work. PAHO's regional level is constituted by the Environmental Health Program at Headquarters, including the Pan American Center for Sanitary Engineering and Environmental Sciences (CEPIS) in Lima, Peru, and the Center for Human Ecology and Health (ECO) in Mexico. The regional level provides technical support to country activities. PAHO's Decade work is in line with the mandates in Resolution XXII of the XXVI Meeting of the Directing Council of PAHO (1979) on the "Strategies for Expanding and Improving Potable Water Supply and Excreta Disposal Services during the Decade of the 1980s." The Medium-Term Program in Environmental Health (1984-1989) gives

highest priority to the Decade under the component of Water Supply and Sewage and Excreta Disposal, listing the objectives, targets and strategies guiding the technical cooperation with Member Countries (Annex). The main thrust is given by the following strategies:

- Promotion of the Decade;
- Planning;
- Mobilization of resources;
- Extension of coverage to peri-urban and rural areas;
- Technology and information;
- Institutional development and optimization of installed services capacity; and
- Improvement of water quality.

The environmental health work of PAHO follows the elements that guide the Organization's technical cooperation, which are: the mobilization of national resources, the dissemination of information, training, development of guidelines and standards, promotion of research, and direct consulting services. Some of the important activities carried out with PAHO's cooperation are indicated under section 3.3.3 on specific actions.

The details of the activities (1982-1985) can be found in the Quadrennial Report of the Regional Director.

PAHO's program is carried out in close coordination and collaboration with international and bilateral agencies participating in the Decade.

#### IV. GENERAL CONCLUSIONS

1. The advances of water supply and sanitation in the 1960s and 1970s in the Latin American and the Caribbean countries were very substantial in respect of coverage and acceptance of sound management and technical concepts and principles. However, there were also important constraints that impeded faster progress, and many still remain.

2. In 1980 and 1985, 25 countries of the Region established goals, and revised them in 1983 and 1985, to be attained by the end of the Decade (1990). These goals, on a regional basis, do not appear to be overly ambitious and give consideration to the need to shorten the gap between water supply and excreta disposal coverage. Nevertheless, in the first three years of the Decade, the progress made has been slower than expected, and it seems unlikely that the goals will be met unless much stronger action is taken. Further, great differences exist in the extent of coverages of different countries, a factor that should be considered carefully when providing technical and financial cooperation.

3. An important constraint has been the shortage of funds. Due to the unexpected economic crisis, external finance has not increased to the levels expected. In fact, during the first five years of the Decade, it has remained at pre-Decade levels, if not lower. Under

present economic conditions in the countries, it is unlikely that funds from this source will increase substantially in the near future.

4. Although no information is available on national funds invested in the sector, aside from counterpart funds to loans, it is likely that these have diminished. The need for counterpart funds for loans is critical as the lack of them will slow down project implementation usually resulting in substantial increases in the cost of the installations. In addition, funds are required to manage, operate, maintain and rehabilitate services.

5. Urbanization rates are much higher than national growth rates, largely due to rural-urban migration. By the year 2000, most countries, with the exception of a few in Latin America and the Caribbean, will have over 75% of their population living in urban areas. This is particularly relevant because poor urban areas are estimated to have above 40% of the urban population, and in the next 10 years 40 million more may be added. The critical situation of these populations is the most important challenge of the IDWSSD in the Region.

6. Rural populations are growing at a slow pace. Nevertheless, the present water supply and sanitation situation requires urgent attention because of the magnitude of the problem and the special socioeconomic characteristics of the population groups and the dispersed population.

## V. RECOMMENDATIONS

Considering the progress made so far by the Member Countries in their efforts to reach the IDWSSD targets, the present economic situation and trends, the special population problems, constraints and other factors, it is recommended that Member Countries, international finance and technical cooperation agencies, bilateral agencies and others, review the situation and make more purposeful efforts to resolve existing constraints and to utilize approaches and strategies that would make it possible to make more efficacious use of existing resources and such new ones as may be obtained, as follows:

### 1. *Development of a Stronger Political Commitment*

In various countries, the collective commitment to the Decade has been ratified at the highest political levels; however, in many instances, international cooperation projects lack local counterpart support. Health Ministries and other institutions responsible for the sector should take the initiative to promote better understanding on the part of other government sectors, of community leaders, and of the public in general, of the economic and health benefits to be obtained from water supply and sanitation.

### 2. *Institutional Development*

The water supply and sanitation institutions in the countries suffer constraints of various natures, which impede the optimum utilization of their installed capacities and of new resources. Member Countries should look at the potential benefits to be obtained and promote and support the overall strengthening of the institutions, particularly through the inclusion of adequate resources for institutional development in external loans and in technical cooperation projects.

3. *Human Resources*

Shortage of prepared staff in the sector is recognized as one important constraint. The concept of human resources development is intrinsic to institutional development and needs to be more fully accepted. Projects for human resources development within the context of institutional and sectoral needs require support. External finance agencies can play an important role in furthering the concept and supporting its application by helping to integrate realistic and affordable training approaches into current and new projects and other activities.

4. *Rehabilitation*

Inadequate operation and maintenance of water supply and sanitation facilities has led to poorly functioning or broken-down systems in many countries. Rehabilitation will usually allow the country to recapture much of the installed investment at lower cost than new facilities. Operation and maintenance therefore, should be a part of both national efforts and external finance policy. Operation, maintenance, and rehabilitation programs would contribute to emphasize its importance in national programs and lower the overall costs of services. In order to be truly effective, rehabilitation investments must be complemented with sustained operation and maintenance.

5. *Control of Water Losses*

Water losses due to leakage, overflows, clandestine use, waste, operational and special uses, and others, constitute a considerable economic and resource loss which should be reduced to the minimum possible considering the technical, economic, financial, institutional, political and social viability. The control of water losses implies the rational and efficient use of water and should be incorporated in national water supply programs as a priority component.

6. *Technology*

Present technologies for water supply and sanitation in marginal urban and rural areas (priority areas of the Decade) are largely incompatible with human, financial and management resources available, and with service demands. New approaches and appropriate technology to lower costs are required to attack effectively the problem. In addition, continued increasing support for the application of appropriate technologies and approaches in comprehensive projects up to the point where success is assured needs to be pursued. It is most important that countries carefully select equipment and technologies to avoid future problems of operation and maintenance.

7. *Project Preparation*

Lack of project preparation capacity has been identified as an important constraint limiting the flow of external funds to the countries. Activities in this area are limited. Ministries of health and external support agencies could contribute to multiply these efforts and to institutionalize the process in the organizations so that they can prepare projects for national and international support.

8. *Attention to the Urban Poor and Rural Populations*

In many countries these priority groups of the Decade targets are widely neglected. More emphasis than in the past needs to be given to this situation, including clarification of the role of the sector agencies and the institutionalization of those aspects that favor increased attention and participation. National policies should emphasize this need. International and bilateral agencies should take a new look at their support activities to shift the emphasis and give more attention to the poor population. Loans, grants and other forms of support to the sector could include service to those marginal groups and incorporate the specific support activities needed.

9. *Community Participation*

Community participation is now well recognized as an essential component of project development. Community involvement in all phases of development, from conceptualization to operation, maintenance, administration and future expansion, needs to be applied, including the role of women and children. So far, the potential for mobilization of local resources has not always been fully utilized. Community participation with this new concept will not only reduce investment costs, but will also insure the operation and administration of services at a lower expense.

10. *Primary Health Care*

Cooperation between health and water supply and sanitation institutions requires additional efforts. This integration is particularly important in rural and urban marginal areas where the infrastructure of both services can be mutually supportive, but it is necessary to develop a better understanding of how primary health care can be used to support rural and peri-urban projects, and apply this concept extensively. Therefore, health agencies, together with water supply and sanitation authorities, should explore opportunities for closer cooperation in this regard.

11. *National Resources*

Mobilizing additional national resources for the water and supply sanitation sector under present circumstances in the countries of Latin America and the Caribbean may be difficult. Moreover, the lack of such funds could have a particularly negative impact because the lack of counterpart funds may delay execution of externally funded projects, and may also result in cost increases. Also, the shortage of funds to cover recurrent expenditures, i.e., to pay for operation and maintenance, may lead to a faster than normal deterioration of installations and, thus, to a reduction in both the financial and socioeconomic returns from the investment. It is essential, therefore, that national and local resources be mobilized and channeled effectively by employing innovative strategies that bring down costs, such as optimizing the use of existing resources, applying appropriate technology, incorporating community participation in the various stages of projects, and so forth.

12. *Financial Policies*

Lack of clearly defined financial policies to support the provision of water supply and sanitation services to low income groups in urban and rural areas makes it difficult for



the sector's institutions to compete for funding, particularly vis-à-vis other sectors. Therefore, it is essential that governments and lending agencies adopt policies and establish financing mechanisms that attend to the water supply and sanitation needs of these populations.

13. *Technical Cooperation Among Developing Countries (TCDC)*

One of the most effective and efficient ways of transferring operating experience and technologies is through the use of more developed agencies as the suppliers of the technical cooperation to others that are less developed. This approach has been shown to accelerate the transfer of practices that can be more easily absorbed and implemented by the staff of the receiving agency. For this to happen it is necessary that the countries establish criteria and guides to facilitate actions in this direction.

## INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE 1. Population with Water Supply, Sewerage or Excreta Disposal Services  
Data on Situation in 26 Countries as of December 1980\*\* (Base Year for Decade)  
(Population in Millions)

Country or Territory	DRINKING WATER SUPPLY											SEWERAGE AND EXCRETA DISPOSAL								
	Total Population Served					Urban - Served			Rural - Served			Total Population Served		Urban		Rural				
	Total Country Population	With Connection	Easy* Access	Total	%	Urban Population	With Connection	%	Easy Access	Total	%	Rural Population	Easy Access and Connection	%	Total Served	%	Population Served	%	Population Served	%
Argentina	27.94	13.38	1.44	14.82	53	23.19	13.38	58	0.65	14.03	62	4.75	0.79	17	20.21	72	18.56	80	1.65	35
Bahamas*	0.220	0.112	0.024	0.136	59	0.136	0.112	57	0.024	0.136	100	0.084	-	-	0.12	45	0.12	88	-	-
Barbados	0.244	0.077	0.163	0.240	98	0.079	0.077	97	0.001	0.078	99	0.165	0.162	98	-	-	-	-	-	-
Belize	0.146	0.045	0.053	0.098	66	0.073	0.045	62	0.027	0.072	99	0.073	0.026	36	0.100	69	0.045	62	0.055	75
Bolivia	5.60	0.60	1.45	2.05	37	2.49	0.60	24	1.13	1.73	69	3.11	0.32	10	1.04	19	0.92	37	0.12	4
Brazil	119.10	64.61	22.00	86.61	72	80.48	64.61	80	2.40	67.01	83	38.62	19.60	50	26.30	22	25.91	32	0.39	1
Colombia <sup>a</sup>	27.00	11.84	11.27	23.11	86	17.28	11.84	68	4.16	16.00	93	9.72	7.11	73	16.37	61	16.00	92	0.37	4
Costa Rica	2.22	1.30	0.76	2.06	93	1.33	1.30	98	0.03	1.33	100	0.89	0.73	82	2.07	93	1.32	99	0.75	84
Chile	11.20	8.42	1.01	9.43	84	9.07	8.42	93	0.65	9.07	100	2.13	0.36	17	9.24	82	9.03	99	0.21	-
Dominican Rep.	5.43	1.64	1.59	3.23	59	2.75	1.64	60	0.69	2.33	85	2.68	0.90	34	0.80	15	0.69	25	0.11	4
Ecuador	8.12	2.77	1.10	3.87	48	3.82	2.77	73	0.25	3.02	79	4.30	0.85	20	3.54	44	2.80	93	0.74	17
El Salvador	4.54	1.17	1.16	2.33	51	1.90	1.17	62	0.11	1.28	67	2.64	1.05	40	1.60	35	0.91	48	0.69	35
Guatemala	7.26	1.38	1.86	3.24	45	2.69	1.38	51	1.03	2.41	90	4.57	0.83	18	2.14	29	1.22	45	0.92	20
Guyana	0.793	0.350	0.281	0.631	79	0.389	0.350	90	0.039	0.389	100	0.404	0.242	60	0.606	76	0.283	73	0.323	80
Haiti	4.91	0.33	0.56	0.89	18	1.20	0.33	28	0.28	0.61	51	3.71	0.28	8	0.87	18	0.50	42	0.37	10
Honduras	3.75	0.70	1.52	2.22	54	1.36	0.70	51	0.56	1.26	93	2.39	0.96	40	1.29	31	0.67	49	0.62	26
Jamaica	2.25	0.62	0.51	1.13	50	1.13	0.62	55	-	0.62	55	1.12	0.51	46	0.15	7	0.13	12	0.02	2
Mexico	70.12	28.39	22.76	51.15	73	45.79	28.39	62	13.03	41.42	90	24.33	9.73	40	38.37	55	35.45	77	2.92	12
Nicaragua	2.73	0.97	0.08	1.05	39	1.46	0.97	66	0.01	0.98	67	1.27	0.07	6	0.50	18	0.50	34	-	-
Panama	1.92	0.84	0.72	1.56	81	0.94	0.84	89	0.11	0.95	100	0.98	0.61	61	1.36	71	0.78	83	0.58	59
Paraguay	3.06	0.45	0.17	0.62	20	1.15	0.45	39	-	0.45	39	1.91	0.17	8	2.61	85	1.09	95	1.52	80
Peru	16.82	5.82	2.31	8.13	48	10.21	5.82	57	1.10	6.92	68	6.61	1.21	18	5.88	5	5.86	57	0.02	-
Suriname	0.352	0.09	0.22	0.30	85	0.10	0.09	98	0.02	0.110	100	0.252	0.200	79	0.300	85	0.100	100	0.200	79
Trinidad	1.10	0.55	0.52	1.07	97	0.70	0.55	79	0.15	0.70	100	0.40	0.37	93	1.02	93	0.67	96	0.35	88
Uruguay	2.94	2.19	0.17	2.36	80	2.44	2.19	90	0.16	2.35	96	0.50	0.01	2	1.47	50	1.44	59	0.03	6
Venezuela	15.02	9.80	2.87	12.67	84	11.89	9.80	82	1.20	11.00	93	3.13	1.67	53	7.47	49	7.09	71	0.38	12
Totals	344.785	158.444	76.571	235.015	68	224.047	158.444	71	27.811	186.255	83	120.738	48.760	40	145.426	42	132.088	59	13.338	11

\* Includes urban easy access, rural easy access and rural house connections in rural areas.

\*\* These data were adjusted with information received from the countries in 1983 and 1985.

Note: The discrepancy in some totals is due to approximation in the decimal fractions, and also to lack of data in some cases.

**INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE**

**TABLE 2. Summary of Investments in Water Supply and Sewerage or  
Excreta Disposal Projects in Latin America and the Caribbean,  
Partially Financed with External Assistance  
(1961-1971, 1972-1980 and 1961-1980, US\$ Millions Current Prices)**

	1961-1971 <sup>1</sup>	1972-1976 <sup>2</sup>	1977-1980 <sup>3</sup>	1972-1980	1961-1980
<i>International Loans</i>					
Inter-American Development Bank (IDB)	553.45	389.74	690.50	1,080.24	1,633.69
International Bank for Reconstruction and Development (IBRD)	188.80	297.03	598.55	895.58	1,084.38
United States Agency for International Development (AID)	147.36	16.45	37.70	54.15	201.51
Export-Import Bank (EXIMBANK)	30.51	-	-	-	30.51
Canadian International Development Agency (CIDA)	-	20.62	-	20.62	20.62
Other	-	-	-	-	-
<b>Total External Funds (Average/Year)</b>	<b>920.12 (83.75)</b>	<b>723.84 (144.77)</b>	<b>1,326.75 (331.69)</b>	<b>2,050.59 (227.84)</b>	<b>2,970.71 (148.54)</b>
<b>National Matching Funds</b>	<b>922.03</b>	<b>2,901.16**</b>	<b>2,862.82*</b>	<b>5,763.90**</b>	<b>7,452.53</b>
<b>Other National Funds</b>	<b>766.52</b>				
<b>Total National Funds</b>	<b>1,688.55</b>	<b>2,901.16</b>	<b>2,862.82*</b>	<b>5,763.90**</b>	<b>7,452.53</b>
<b>Grand Total</b>	<b>2,608.67</b>	<b>3,625.00</b>	<b>4,189.57*</b>	<b>7,814.49**</b>	<b>10,423.24</b>

\* National funds for 1977-1980 only show matching funds.

\*\* Includes other national funds for 1972-1976 only.

Source: <sup>1</sup> Annual Report of the Director, 1971. Pan American Health Organization/World Health Organization, 1972. (Off. Document 116).

<sup>2</sup> Annual Report of the Director, 1976. Pan American Health Organization/World Health Organization, 1977 (Off. Document 150).

<sup>3</sup> Annual Report of the Director, 1981. Pan American Health Organization/World Health Organization, 1982. (Off. Document 183).

## INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE 3. Population to be Served with Water Supply, Sewerage or Excreta Disposal Services by the End of 1990, According to the National Targets Set by 25 Countries (Population in Millions)

Country or Territory	DRINKING WATER SUPPLY											SEWERAGE AND EXCRETA DISPOSAL								
	Total Population Served					Urban - Served					Rural - Served			Total Population Served		Urban		Rural		
	Total Country Population	With Connection	Easy* Access	Total	%	Urban Population	With Connection	%	Easy Access	Total	%	Rural Population	Easy Access and Connection	%	Total Served	%	Population Served	%	Population Served	%
Argentina	32.87	22.20	1.09	23.29	71	27.74	22.20	80	0.00	22.20	80	5.13	1.09	21	21.63	65	19.42 <sup>c</sup>	70	2.21	43
Bahamas	0.17	0.165	0.005	0.170	100	0.17 <sup>c</sup>	0.165	97	0.005	0.170	100	-	-	-	-	-	0.17	100	-	-
Barbados	0.255	0.088	0.166	0.254	100	0.089	0.088	99	0.001	0.089	100	0.166	0.165	99	-	-	-	-	-	-
Belize	0.267	0.175 <sup>c</sup>	0.092	0.267	100	0.267	0.175 <sup>c</sup>	65	0.092	0.267	100	-	-	-	-	-	0.185	69	-	-
Bolivia	7.40	2.83	1.26	4.09	55	3.76	2.83	75	0.20	3.03	81	3.64	1.06	29	2.28	31	1.71	46	0.57	16
Brazil	151.97	104.91	24.52	129.43	85	116.57	104.91	90	3.16 <sup>c</sup>	108.07	93	35.40	21.36	60	72.10 <sup>a</sup>	-	72.10	62	-	-
Colombia	36.10	23.04	13.32	36.36	100	25.60 <sup>a</sup>	23.04	90	4.11 <sup>a</sup>	27.15	100	10.50 <sup>a</sup>	9.21	88	26.78	74	20.48 <sup>a</sup>	80	6.30 <sup>a</sup>	60
Costa Rica	2.80	1.65	0.98	2.63	94	1.68	1.65	98	0.03	1.68	100	1.12	0.95	85	2.74	98	1.68	100	1.06	95
Chile	13.13	11.23	1.61	12.84	98	11.23	11.23	100	0.00	11.23	100	1.90	1.61	85	12.90 <sup>a</sup>	98	9.20	82	3.70 <sup>c</sup>	-
Dominican Rep.	6.97 <sup>a</sup>	2.95	2.92	5.87	84	4.32 <sup>a</sup>	2.95	68	1.28	4.23	98	2.65 <sup>a</sup>	1.64	62	2.99	43	1.99	46	1.00	38
Ecuador	10.78	4.89	2.59	7.48	69	5.98	4.89	82	0.19	5.08	85	4.80	2.40	50	7.48	69	5.08	85	2.40	50
El Salvador	5.99	1.94	2.99	4.93	82	2.52	1.94	77	0.39	2.33	92	3.47	2.60	75	4.67	78	2.61	100	2.06	59
Guatemala	9.18	3.40 <sup>c</sup>	2.04	5.44	59	3.44	3.40	98	0.04	3.44	100	5.74	2.00	35	6.53	71	4.08	100	2.45	43
Guyana	0.84 <sup>a</sup>	0.374	0.436	0.810	96	0.41 <sup>a</sup>	0.374	91	0.036 <sup>a</sup>	0.41	100	0.43 <sup>a</sup>	0.40	93	0.80	95	0.40	98	0.40	93
Haiti	5.77	0.64	3.18	3.82	66	1.71	0.64	37	0.73	1.37	80	4.06	2.45	60	3.82	66	1.37	80	2.45	60
Honduras	5.11	2.01	2.58	4.59	90	2.24	2.01	90	0.00	2.01	90	2.87	2.58	90	4.04	79	1.75	78	2.29	80
Jamaica	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mexico	90.28 <sup>a</sup>	51.60	16.69	68.29	76	63.96 <sup>a</sup>	51.60	81	3.39	54.99	86	26.32 <sup>a</sup>	13.30	50	53.55	59	46.69	73	6.86	26
Nicaragua	3.85 <sup>a</sup>	2.15	0.97	3.12	81	2.39 <sup>a</sup>	2.15	90	0.24	2.39	100	1.46 <sup>a</sup>	0.73	50	-	-	1.19 <sup>a</sup>	50	-	-
Panama	2.38	1.18	0.35	1.53	64	1.18	1.18	100	0.05 <sup>a</sup>	1.23	100	1.20	0.30	25	2.18	92	1.43	100	0.75	62
Paraguay	3.72	1.11	0.34	1.45	39	1.41	1.11	79	0.04	1.15	82	2.31	0.30	13	3.09	83	1.17 <sup>a</sup>	83	1.92	88
Peru	22.33	9.34	7.05	16.39	73	14.86	9.34	62	2.99	12.33	83	7.47	4.06	54	9.81	44	8.93	60	0.88	12
Suriname	0.550	0.30	0.240	0.54	99	0.300	0.30	100	0.00	0.30	100	0.250	0.240	96	0.430	78	0.230	77	0.200	80
Trinidad	1.30 <sup>a</sup>	0.89	0.527	1.417	99	0.89 <sup>a</sup>	0.89	100	0.127 <sup>a</sup>	1.017	100	0.41 <sup>a</sup>	0.40	98	1.26	97	0.89	100	0.37	90
Uruguay	3.13 <sup>a</sup>	2.52	0.53	3.05	97	2.65 <sup>a</sup>	2.52	95	0.14 <sup>a</sup>	2.66	100	0.48 <sup>a</sup>	0.39	81	0.93	30	0.74	28	0.19	40
Venezuela	19.74	15.23	1.62	16.85	85	16.58	15.23	92	0.51	15.74	95	3.16	1.11	35	14.40	73	13.71	83	0.69	22
Totals	436.882	266.812	88.096	354.908	81	311.946	266.812	85	17.751	284.563	91	124.936	70.345	56	254.410	58	217.205	69	38.750	31

a Data for 1990 not available. Used data provided in 1983.

c Estimated figures as data not available.

\* Includes urban easy access, rural easy access and rural house connections.

Note: The discrepancy in some totals is due to approximation in the decimal fractions, and also to lack of data in some cases.

**INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE**

**TABLE 4. Additional Population to be Served with Water Supply,  
Sewerage or Excreta Disposal Facilities in the Decade (1981-1990),  
to Achieve the Targets Adopted by the Countries (Millions)**

	Additional population to be served (1981-1990)	Population that would have service (1990)	Coverage that would be reached in 1990 with the countries' targets
<i>1. Water Supply</i>			
Urban population	99	285	91%
Rural population	21	70	56%
Total population	120	355	81%
<i>2. Sewerage or Sanitation</i>			
Urban population	85	217	69%
Rural population	26	39	31%
Total population	111	256	58%

Note: Data summarized from Tables 1 and 3.

## INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE 5. Population to be Served with Water Supply in the Decade (1981-1990) According to the Goals Established by 25 Countries, Per Capita Unit Cost and Estimates of Total Costs for the Decade (Population in Millions, Total Costs in US\$ Millions)

Country	Urban Population to be served with		Per Capita Unit Cost* US\$		Cost Urban US\$ millions		Rural Population to be Served	Per Capita Unit Cost* US\$	Cost Rural US\$ millions
	House Connec-	Public Taps	House Connec-	Public Taps	House Connec-	Public Taps			
Argentina	8.82	-	180	50	1,587.60	-	0.30	170	51.00
Bahamas	0.053	-	350	260	18.55	-	0.162	-	-
Barbados	0.11	-	170 <sup>a</sup>	50	1.87	-	0.004	125	0.50
Belize	-	0.065	25	-	-	-	-	125 <sup>a</sup>	-
Bolivia	2.23	-	100	96	2,230.00	-	0.74	65	48.10
Brazil	40.30	0.76	100	-	4,030.00	-	1.76	45 <sup>a</sup>	79.20
Colombia	11.20	-	108	30	1,209.60	-	2.10	69	144.90
Costa Rica	0.35	-	94	-	32.90	-	.22	65	14.30
Chile	2.81	-	165	-	463.65	-	1.25	150	187.50
Dom. Rep.	1.31 <sup>a</sup>	0.59 <sup>a</sup>	94 <sup>a</sup>	94 <sup>**</sup>	123.14 <sup>a</sup>	55.46 <sup>a</sup>	0.74 <sup>**</sup>	58 <sup>a</sup>	42.92 <sup>a</sup>
Ecuador	2.12	-	195	85	413.40	-	1.55	128	198.40
El Salvador	0.77	0.28	162	63	124.70	17.64	1.55	60	93.00
Guatemala	2.02	-	49	11	98.98	-	1.17	65	76.05
Guyana	0.024	-	120	100	2.88	-	0.158	120	18.96
Haiti	0.31	0.45	145	48	13.95	21.60	2.17	36	78.12
Honduras	1.31	-	319	-	417.89	-	1.91	53	101.23
Jamaica	-	-	-	-	-	-	-	-	-
Mexico	23.24 <sup>a</sup>	-	143 <sup>a</sup>	-	3,323.32 <sup>a</sup>	-	3.57	157 <sup>a</sup>	560.49
Nicaragua	1.18	0.23	116 <sup>a</sup>	24 <sup>a</sup>	136.88	5.52	0.66	57 <sup>a</sup>	37.62
Panama	0.34	-	125	-	42.50	-	-	80	-
Paraguay	0.66	0.04	126	-	83.16	-	0.14	124	17.36
Peru	3.52	-	72	20	253.44	-	2.85	29	82.65
Suriname	0.21	-	525	195	110.25	-	.04	85	3.40
Trinidad	0.34	-	385	-	130.90	-	0.023	451	10.37
Uruguay	0.33	-	122 <sup>a</sup>	-	40.26	-	0.38	112 <sup>a</sup>	42.56
Venezuela	5.43	-	150 <sup>a</sup>	-	814.50	-	-	104 <sup>a</sup>	-
Total					15,704.32	100.22			1,888.63

Total Water Supply = US\$17,592.95 million

\* Unit Costs provided by countries in December 1985..

\*\* From other sources.

a Data not available for 1985, therefore used 1983 data.

INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE 6. Population to be Served with Sewerage or Excreta Disposal Facilities in the Decade (1981-1990) According to the Goals Established by 25 Countries, Per Capita Unit Cost, and Estimates of Total Cost for the Decade (Population in Millions, Total Cost in US\$ Millions)

Country	Urban Population to be served	Per Capita Unit Cost* US\$	Cost Urban US\$ millions	Rural Population to be served	Per Capita Unit Cost* US\$	Cost Rural US\$ millions
Argentina	0.86	200	172.00	0.56	170	95.20
Bahamas	0.05	356 <sup>b</sup>	18.25	-	-	-
Barbados	-	1.202 <sup>a</sup>	-	-	-	-
Belize	0.14	-	-	-	-	-
Bolivia	0.79	120 <sup>a</sup> /40 <sup>b</sup>	63.20 <sup>c</sup>	0.57	40	22.80
Brazil	46.19	120 <sup>a</sup>	5,542.80	-	15 <sup>**</sup>	-
Colombia	4.48	200	896.00	5.93	51	302.43
Costa Rica	0.36	90	-	0.11	23	-
Chile	0.17	145 <sup>**</sup>	24.65	3.49	80 <sup>**</sup>	279.20
Dom. Rep.	1.30	69 <sup>**</sup>	89.70	0.89	52 <sup>**</sup>	46.28
Ecuador	2.28	217 <sup>a</sup> /100 <sup>b</sup>	360.24 <sup>c</sup>	1.66	149	247.34
El Salvador	1.70	81 <sup>a</sup> /25 <sup>b</sup>	90.10 <sup>c</sup>	1.37	10	13.70
Guatemala	2.86	113 <sup>a</sup> /8 <sup>b</sup>	174.46	1.53	6	9.18
Guyana	0.12	-	-	0.08	-	-
Haiti	0.87	200 <sup>a</sup> /25 <sup>b</sup>	97.40 <sup>c</sup>	2.08	15	31.20
Honduras	1.08	146	157.68	1.67	18	30.06
Jamaica	-	-	-	-	-	-
Mexico	11.24	185 <sup>a</sup>	2,079.40	3.94	6	23.64
Nicaragua	0.69	144 <sup>a</sup>	99.36	-	30	-
Panama	0.65	235	152.75	0.17	15	2.55
Paraguay	0.08	127 <sup>a</sup> /52 <sup>b</sup>	25.92 <sup>c</sup>	0.40	56	22.40
Peru	3.07	74 <sup>a</sup> /20 <sup>b</sup>	144.29 <sup>c</sup>	0.86	27	23.22
Suriname	0.13	150 <sup>a</sup> /50 <sup>b</sup>	13.00 <sup>c</sup>	-	50	-
Trinidad	0.22	880 <sup>a</sup> /440 <sup>b</sup>	145.20 <sup>c</sup>	0.02	110	2.20
Uruguay	0.30 <sup>**</sup>	150 <sup>**</sup>	45.00	0.16	120 <sup>**</sup>	19.20
Venezuela	6.62	150 <sup>**</sup>	993.00	0.31	80 <sup>**</sup>	24.80
Total			11,324.40			1,195.90

Total Sewerage = US\$12,520.30 million

\* Per capita unit costs provided by countries in December 1985.

\*\* From other sources.

a Sewerage with house connections

b Septic tank

c Estimated by using average of <sup>a</sup> plus <sup>b</sup>.

## INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE

TABLE 7. Population with Drinking Water, Sewerage or Excreta Disposal Services.  
Data on Progress in 26 Countries as of December 1985  
(Population in Millions)

Country or Territory	DRINKING WATER SUPPLY											SEWERAGE AND EXCRETA DISPOSAL								
	Total Population Served					Urban - Served				Rural - Served		Total Population Served		Urban		Rural				
	Total Country Population	With Connection	Easy Access*	Total	%	Urban Population	With Connection	%	Easy Access	Total	%	Rural Population	Easy Access and Connection	%	Total Served	%	Population Served	%	Population Served	%
Argentina	30.57	15.60	1.26	16.86	55	25.57	15.60	61	0.40a	16.00	63	5.00	0.86	17	21.05	69	19.30	76	1.75	35
Bahamas	0.231	0.122a	0.026a	0.148	64	0.148	0.122	82	0.026	0.148	100	0.083	-	-	0.148a	64	0.148	64	-	-
Barbados	0.253	0.087	0.165	0.252	99	0.089	0.087	98	0.002	0.089	100	0.164	0.163	99	0.10a	100	0.10	40	-	-
Belize	0.161	0.062	0.047	0.109	68	0.070e	0.062	88	0.023	0.085	-	0.091e	0.024	-	0.102	63	0.061	-	0.041	-
Bolivia	6.43	2.11	0.64	2.75	43	3.07	2.11	69	0.20	2.31	75	3.36	0.44	13	1.34	21	1.02	33	0.32	10
Brazil	134.48	79.90	23.54	103.44	77	97.40	79.90	82	2.91	82.81	85	37.08	20.63	56	32.50	24	32.10a	33	0.40	2
Colombia	27.50	13.97	11.22	25.19	91	18.10	13.97	77	4.11	18.08	100	9.40	7.11	76	18.59	68	17.34	96	1.25	13
Costa Rica	2.46	1.45	0.84	2.29	91	1.48	1.45	98	0.03	1.48	100	0.98	0.81	83	2.34	95	1.47	99	0.87	89
Chile	12.17	9.54	0.99	10.53	86	10.19	9.54	94	0.41	9.95	98	1.98	0.58	30	10.27	84	10.19	100	0.08	4
Domin. Rep. <sup>a</sup>	5.96	1.82	1.85	3.67	62	3.28	1.82	55	0.96	2.78	85	2.68	0.89	34	1.60	27	1.34	41	0.26	9
Ecuador	9.38	3.71	1.63	5.34	57	4.88	3.71	76	0.22	3.93	81	4.50	1.41	31	6.08	65	4.76	98	1.32	29
El Salvador	4.77	1.51	1.07	2.58	51	2.38	1.51	63	0.11	1.62	68	2.39	0.96	40	2.97	62	1.94	82	1.03	43
Guatemala	7.96	1.83	1.04	2.87	36	2.98	1.83	61	0.33	2.16	72	4.98	0.71	14	1.82	23	1.22	41	0.60	12
Guyana	0.817	0.365	0.306	0.671	82	0.401	0.365	91	0.036	0.401	100	0.416	0.27	65	0.733	90	0.400	100	0.33	80
Haiti	5.27	0.45	1.55	2.00	38	1.41	0.45	32	0.38	0.83	59	3.86	1.17	30	1.10	21	0.59	42	0.51	13
Honduras	4.07	0.55	1.45	2.00	46	1.44	0.55	32	0.26	0.81	47	2.63	1.19	45	1.25	29	0.35	24	0.90	34
Jamaica <sup>a</sup>	2.10	0.99	1.03	2.02	96	1.10	0.99	90	0.10	1.09	99	1.00	0.93	93	1.91	90	1.01	92	0.90	90
Mexico	79.24	37.45	28.08e	65.53	78	54.24	37.45	79	16.23	53.68	99	25.00	11.85	47	44.86	57	41.70	77	3.16	13
Nicaragua	3.27	1.30	0.27	1.57	48	1.87	1.30	70	0.12	1.42	76	1.40	0.15	11	0.88	27	0.65	35	0.23	16
Panama	2.14	1.04	0.72	1.76	82	1.09	1.04	95	0.05	1.09	100	1.05	0.67	64	0.72	80	1.08	99	0.64	61
Paraguay	3.35	0.59	0.21	0.80	24	1.18	0.59	50	0.03	0.62	53	2.17	0.18	8	2.85	85	1.05	89	1.80	83
Peru	19.70	7.62	2.73	10.35	53	12.55	7.62	61	1.53	9.15	73	7.15	1.20	17	9.29	47	8.40	67	0.89	12
Suriname	0.502	0.240	0.152	0.392	97	0.342	0.240	99	0.002	0.242	100	0.160	0.150	94	0.282	85	0.266	100	0.076e	48
Trinidad	1.76	0.671	0.484	1.155	98	0.080	0.671	84	0.12 7	0.798	99	0.376	0.357	95	1.157	98	0.800	100	0.357	95
Uruguay <sup>a</sup>	2.97	2.19	0.28	2.47	83	2.46	2.19	89	0.14	2.33	95	0.51	0.14	27	1.74	59	1.44	59	0.30	-
Venezuela <sup>a</sup>	16.47	11.25	3.09	14.34	83	12.75	11.25	88	0.66	11.91	88	3.72	2.43	65	7.47	45	7.27	57	0.20	-
Total	383.400	196.417	84.67	281.097	73	261.270	196.417	75	29.396	225.813	86	122.130	55.274	45	174.199	45	155.995	60	18.154	15

a Data for 1985 not available. Used data for 1983.

e Estimated figure as data not available.

\* Includes urban easy access, rural easy access and rural house connections.

Note: The discrepancy in some totals is due to approximation in the decimal fractions, and also to lack of data in some cases.



**INTERNATIONAL DRINKING WATER SUPPLY AND SANITATION DECADE**

**TABLE 8. External Financing and National Matching Funds for Urban and Rural Water Supply and Sanitation Projects in Latin America and the Caribbean from 1981 to 1985 (US\$ Millions, Current Prices)**

	1981	1982	1983	1984	1985	Total 1981-1985
International Bank for Reconstruction and Development (IBRD) <sup>1</sup>	346.5	40.6	424.2	28.6	163.8	1,003.7
Inter-American Development Bank (IDB)	187.8	265.3	245.3	340.8	141.0	1,180.2
<b>Total International Funding</b>	<b>534.3</b>	<b>305.9</b>	<b>669.5</b>	<b>369.4</b>	<b>304.8</b>	<b>2,183.9</b>
<b>Total National Matching Funds to Loans<sup>2</sup></b>	<b>742.0</b>	<b>432.0</b>	<b>515.0</b>	<b>844.0</b>	<b>293.1</b>	<b>2,826.1</b>
<b>Grand Total</b>	<b>1,276.3</b>	<b>737.9</b>	<b>1,187.5</b>	<b>1,213.4</b>	<b>597.8</b>	<b>5,010.0</b>
Other National Funding (Estimate using 30/70 ratio)			US \$2,269.7			
<b>Total of Investments 1981-1985 US\$ 7,279.7</b>						

Note 1: The water and sanitation components in loans for other sectors such as agriculture are not included.

Note 2: Matching funds in relation to bilateral projects not included.

## REFERENCES

1. United Nations. *Report of the United Nations Conference on Water*. Mar del Plata, 14-25 March 1977.
2. Pan American Health Organization. *Plan of Action for the Implementation of Regional Strategies - Health for All by the Year 2000*. Official Document 179. Washington, D.C.
3. World Health Organization. *Drinking Water and Sanitation (1981-1990), A Way To Health*. Geneva, 1981.
4. Pan American Health Organization. *Ten-Year Health Plan for the Americas*. Final Report of the III Special Meeting of Ministers of Health of the Americas, 2-9 October 1972. Official Document 118. Washington, D.C., 1973.
5. Pan American Health Organization. *Strategies for Extending and Improving Potable Water Supply and Excreta Disposal Services During the Decade of the 1980's*. Scientific Publication No. 390. Washington, D.C., 1979.
6. Pan American Health Organization. *Actividades en salud ambiental de la Organización Panamericana de la Salud*. Serie Ambiental No. 1. Washington, D.C., 1981.
7. Pan American Health Organization. *Environmental Health: Country and Regional Activities in the Americas*. Environmental Series No. 2. Washington, D.C., 1982.
8. Pan American Health Organization. *Drinking Water Supply and Sanitation: The International Decade in the Americas*. Environmental Series No. 3. Washington, D.C., 1983.
9. Pan American Health Organization. *Progress in the International Drinking Water Supply and Sanitation Decade in the Americas (1981-1983)*. Washington, D.C., 1984.
10. Pan American Health Organization. *Annual Report of the Director*. Washington, D.C., 1980-1985.
11. World Health Organization. *El Decenio Internacional del Agua Potable y del Saneamiento Ambiental - Examen de la situación existente en los países en 31 de diciembre de 1980*. Geneva, 1985.
12. Pan American Health Organization. *Decade Sector Evaluation Forms (1980 and 1983)*. Washington, D.C., 1980 and 1983.

ANNEX

**PAHO'S ENVIRONMENTAL HEALTH PROGRAM OBJECTIVES, TARGETS AND STRATEGIES DEFINED IN THE MEDIUM-TERM PROGRAM (1984-1989)**

**OBJECTIVE**

To strengthen and extend drinking water supply and excreta and sewage disposal services so as to attain and maintain service coverage and quality levels in line with the objectives of the IDWSSD and HFA/2000.

**TARGETS**

*Extension of Coverage*

1. Promotion of the IDWSSD in all the countries of the Region.
2. Formulation and implementation of national plans for drinking water supply and excreta disposal in at least 20 countries by 1989.
3. By 1989 most of the countries will have expanded their programs for extending the coverage of drinking water supply and sewerage and excreta disposal services to urban-fringe areas and clustered and scattered rural populations in most of the countries with special attention to increasing the coverage of excreta disposal and sewerage services so as to attain levels commensurate with those of water supply.
4. Identification, development, evaluation and use of appropriate technologies for water supply and particularly for excreta and sewage disposal, in the Member Countries by 1989, to support the attainment of coverage levels similar to those of water supply services.
5. Incorporation of the management and protection of drinking water supply sources into the programs of most of the countries by 1989.
6. Development of projects for the sanitary reuse of sewage to increase agricultural production and for other purposes in at least three countries by 1989.

*Institutional Development and Optimization of Installed Service Capacities*

7. By 1989 most of the countries will have programs for strengthening the managerial and operational capacity of water supply and sewage and excreta disposal enterprises.
8. Mobilization of local and international resources for the water supply and sanitation sector, and increase of the capacity of institutions to absorb and use those resources effectively.
9. By 1989 the Member Countries will have adopted programs for strengthening their operation and maintenance capabilities, with special attention to the rehabilitation

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of facilities and to optimizing the use of the installed capacities of the systems, including the control of losses in distribution systems, and optimizing the production in treatment plants using appropriate technologies.

10. By 1989 the countries of Latin America and the Caribbean will have improved their preparations for coping with disasters in the area of drinking water supplies and sewage and excreta disposal.

### *Drinking Water Quality*

11. By 1989 most of the Member Countries will have improved the control of drinking water quality.
12. By 1989 at least 20 countries will have adopted fluoridation for the population served through piped water supply systems providing optimum levels of fluoride in their drinking water for the improvement of dental health.

### *Information Systems and Textbooks*

13. By 1989, 20 countries will have national information centers linked to REPIDISCA and will maintain an ongoing flow of information generation, dissemination and use, primarily on water supplies and sewage and excreta disposal.
14. Strengthening of PAHO's Textbook Program in the environmental health field.

## STRATEGIES

### *Promotion of the Decade*

- Development and dissemination of information material, with emphasis on health and other benefits.
- Establishment of national coordination mechanisms.
- Inclusion of women in Decade activities.

### *Planning*

- Preparation and implementation of national plans.
- Identification and development of resources for planning.
- Monitoring and evaluation of the Decade.

### *Extension of Coverage to Urban-fringe and Rural Areas*

- Development of methodologies.

- Stimulation of the integration of programs, plans and projects with those of primary health care and the transfer approaches geared to community participation.
- Mobilization of local institutional resources.

*Technology and Information*

- Identification, development and application of appropriate technologies.
- Strengthening of information systems in the countries (REPIDISCA) and dissemination of information.
- Encouragement of technical cooperation among developing countries (TCDC).
- Protection and development of water resources.
- Development of methodologies for the protection of surface and ground water resources.
- Stimulation of the appropriate allocation of water resources for drinking water and sewage disposal purposes.
- Development of new water supply sources.
- Promotion and application of safe and sanitary techniques for the recycling of sewage.
- Reinforcement of PAHO's Textbook Program.

*Institutional Development and Optimization of Installed Service Capacities*

- Strengthening of local institutions through technical cooperation.
- Preparation and dissemination of guides, methodologies, models and related materials.
- Strengthening of intersectoral collaboration.
- Support to the development of human resources for primary health care, particularly in the drinking water and sanitation areas.
- Development of educational and orientation materials.
- Evaluation of country manpower needs and the development of systems for their preparation.
- Development of information systems for institutional management, monitoring and evaluation.

- Rehabilitation of systems and optimization of installed capacities.
- Improvement of the operation and maintenance of services.

*Mobilization of Resources*

- Formulation and development of financial policies, mechanisms and rate structures.
- Identification of nontraditional sources of funds.
- Promotion of participation by other sectors—housing, industry, etc.—in the financing of water supply and sanitation works.
- Mobilization of local and international resources for investment and the strengthening of infrastructures, including the identification, preparation and execution of projects.
- Strengthening the absorptive capacity of institutions so that they will more efficiently manage available and additional resources.

*The Improvement of Water Quality*

- Protection of water supply sources and watershed management.
- Water disinfection.
- Development of pilot water quality improvement projects.
- Updating and application of national water quality standards.
- Extension of water fluoridation.