
Special Report: *Water Supply and Sanitation*



Drinking Water Supply and Sanitation in the Americas: Status and Prospects

INTRODUCTION

In response to the objectives established at the 1961 meeting of Presidents of the Americas at Punta del Este, Uruguay, and at the III Special Meeting of Ministers of Health of the Americas in 1972 (Santiago, Chile), the countries of Latin America and the Caribbean significantly expanded water supply and sanitation services in the 1960s and 1970s. The governments assigned higher priority to the sector, undertook institutional and legal reforms to create autonomous and semiautonomous institutions, and increased sector financing. The financial and technical support of multilateral and bilateral external support agencies contributed substantially to the advances.

The United Nations Water Conference, held at Mar del Plata, Argentina, in 1977, recommended that the period 1981–1990 be designated the International Drinking

Water Supply and Sanitation Decade (IDWSSD). The U.N. General Assembly welcomed the recommendation and officially launched the Decade in a special session held on 10 November 1980. According to the Conference, the purpose of the Decade was to provide a safe and adequate supply of drinking water as well as basic sanitary facilities to all people by 1990, if possible, giving priority to the poorest groups. Thus, for the countries of Latin America and the Caribbean, the IDWSSD represented a renewed commitment to efforts that were already under way.

The Plan of Action prepared by the U.N. Water Conference recommended the establishment of goals for 1990 and the development of national plans and programs for water and sanitation within the context of overall socioeconomic development plans. The Pan American Health Organization/World Health Organization (PAHO/WHO), as the agency designated to monitor the progress of the IDWSSD in the Americas, established uniform guidelines for use in national-level progress evaluations. PAHO/WHO support for monitoring efforts consisted of 1) rapid evaluation of the situation at the beginning of the Decade, which served as a basis for establishing goals and preparing national plans; 2) evalua-

Source: Pan American Health Organization, "The Situation of Drinking Water Supply and Sanitation in the American Region at the End of the Decade 1981–1990, and Prospects for the Future—Volume 1," document prepared for the Regional Conference on Water Supply and Sanitation (4–6 September 1990, San Juan, Puerto Rico) by the PAHO Environmental Health Program, Washington, D.C., July 1990.

tion of achievements at the Decade's midpoint to determine advances and constraints and allow better orientation of activities in the second five years; and 3) a final evaluation of achievements in 1990.

The report that follows summarizes the final evaluation for Latin America and the Caribbean as a whole, which was presented along with subregional and national summaries to the regional conference charged with reviewing progress during the Decade and analyzing persisting problems (see the following report, p. 91). It is based mostly on information provided between 1980 and 1988 by the 25 countries that participate in the IDWSSD-PAHO/WHO monitoring system (which include approximately 94% of the population of Latin America and the Caribbean), supplemented by data from final evaluations of Decade achievements undertaken by 21 countries.

THE SECTOR IN THE DECADE 1981-1990

Goals and Achievements

At the beginning of the IDWSSD, most of the countries of the Region established national goals for the increase in coverage of water supply and sanitation services, attempting to approach total cover-

age wherever possible. (These goals were later adjusted in light of the social, political, and economic changes that affected the Region during the 1980s and as better information became available.) Taken together, the country goals translated into the following regional goals:

- To provide drinking water to 87% of the urban population, 80% through household connections and 7% through easily accessible public sources (within 200 m of the dwelling).
- To provide drinking water to 62% of the rural population through household or easy-access public connections.
- To provide sewerage or excreta disposal services to 79% of the urban population, 55% through household connections and 24% by other means.
- To provide sewerage or sanitary excreta disposal services to 37% of the rural population.

Table 1 shows the coverage of services in Latin America and the Caribbean in 1980 and late 1988, based on information from 25 countries. By 1988, the 1990 goals for urban water supply and sanitation coverage had already been met and

Table 1. Drinking water supply and sanitation coverage, based on data from 25 countries in Latin America and the Caribbean, 1980 and 1988.

Area/service	1980			1988			1980-1988	
	Number served ^a	No. not served	% served	Number served	No. not served	% served	Increase in served population	Change in unserved population
Urban water	183.0	40.5	82	257.8	33.8	88	74.8	-6.7
Rural water	56.4	63.4	47	68.5	55.5	55	12.1	-7.9
Urban sanitation	174.2	49.3	78	234.7	56.9	80	60.5	+7.6
Rural sanitation	26.6	93.2	22	39.8	84.7	32	13.2	-8.5

^a All population figures are in millions.

slightly exceeded. However, this was not the case for rural water supply or sanitation, and it was projected that by 1990 these services would still be lagging 5% and 3%, respectively, behind the goals.

Deficits and Imbalances

It is noteworthy that even though the percentage of the urban population served by sanitary excreta disposal systems increased (from 78% to 80%), the actual number of people without such service increased as well, by 7.6 million. This is due to both population growth and extensive migration to urban areas, which overloaded the already precarious services systems on the peripheries of some cities.

Historically, greater priority has been placed on water supply than on sanitation, resulting in an imbalance in coverage. Despite the significant reduction in the population without services that occurred between 1980 and 1988, this imbalance continues and is proportionally similar to the situation in 1980, but with a tendency toward increase. Uncontrolled disposal of wastewater and excreta is not only a major health hazard but also has a significant impact on quality of life and on the environment.

Quality of Water and Services

The goal of the IDWSSD encompassed more than simply building supply facilities and distribution networks. It emphasized providing water and sanitation *with realistic standards of quality and quantity*. This implies adequate quantities of safe water provided on a permanent, continuous (24 hours a day) basis at an affordable cost. It should be noted that the coverage figures given above do not necessarily represent services that meet acceptable minimum standards, since most countries' programs have focused

on expanding or building new services and paid less attention to the quality of the water distributed.

Almost all the countries of the Region have water quality surveillance and control programs in urban areas, and most also have them in rural areas. With notable exceptions, however, surveillance programs are ineffectively or only partially implemented. Control measures are usually the responsibility of the water supply institutions themselves.

Surveys carried out by PAHO as part of workshops to promote the WHO Guidelines for Drinking Water Quality (1984), as well as later studies, indicated that 75% or more of the water supply systems either did not provide effective disinfection or had operational problems that interfered with it. In addition, water supplied at public standpipes may be potable at its source, but its quality cannot be guaranteed by the time it reaches dwellings.

In the peripheral urban areas, where water services are intermittent, and in small and medium-sized systems (particularly in remote areas), the quality standards set by the countries are often not met and water use is generally inefficient, with losses as high as 60% of the water produced. Even the principal cities often have intermittent services, at least in certain areas, and high levels of water loss. Seventeen of the 25 countries in the monitoring system indicate that they have intermittent services, and 11 of them consider the situation serious. Ensuring the quality of water and services poses one of the greatest challenges to the countries in the coming years.

Wastewater Disposal and Water Pollution

In 1962 it was estimated that even in the best-served countries only 10% of the sewerage systems included sewage treat-

ment facilities. Current estimates indicate that the situation in the Region as a whole is unchanged, although several countries have made significant efforts in this regard. Based on 1988 coverage data, the urban population with household connections for both water and sewerage produced 326.4 m³/sec of wastewater, of which only 5–10% received treatment, while urban dwellers with household water but no sewerage connections produced another 51.9 m³/sec. These figures provide only an estimate of current wastewater treatment demand, since they do not take account of industrial water use, the increase in the population covered with sewerage services since 1988, or other causes of increased discharge.

Municipal wastewater can become an economically valuable resource when it is reused for irrigation and aquaculture. However, uncontrolled use of untreated wastewater for irrigation, which reportedly occurs in several countries, poses health hazards. The countries must take measures to adopt appropriate sanitary standards for reuse practices.

Along with the discharge of untreated wastewater, improper disposal of municipal solid wastes also contributes to the pollution of surface water and groundwater. In addition, industrial wastes may include heavy metals and an array of chemicals that are released into the watercourses, air, and soil and eventually reach food. Pollution of groundwater by pesticides and fertilizers is an increasing concern. Most of the countries regulate the discharge of industrial wastes, but enforcement of these regulations is limited.

Costs and Investments

On the basis of unit cost estimates and the coverage goals, at the outset of the Decade the countries determined that the

cost of new facilities would be about US\$30 billion at 1983 prices. Expenditures would be approximately equally divided between the water supply and sanitation subsectors; 86% of the total would be spent in urban areas and the remainder in rural areas. Since very few countries had information on the costs of operation and maintenance, improvements, management, or support activities, these costs were not included in the estimates in most cases.

The figures reported by several countries for investments made during the Decade are substantially less than the totals proposed for meeting established goals. The main reason for this shortfall is the impact of the external debt and inflation. Unfortunately, not enough information is available to determine actual national investment levels, owing not only to problems affecting the countries' information systems but to major fluctuations in exchange and interest rates in many countries, which make estimates difficult. More specific information is available on projects carried out with external support.

According to WHO's Country External Support Information System, 31 external support agencies helped finance water supply and sanitation projects in the Region's countries during the Decade. They included 13 bilateral, 8 multilateral, and 10 nongovernmental organizations. The major support came from the World Bank and the Inter-American Development Bank (IDB), which together contributed an estimated 90% of the external funds earmarked for the sector, over US\$4.4 billion. Private bank loans, donations, and technical cooperation, along with support from bilateral and nongovernmental organizations and volunteer programs, contributed another US\$500 million. Counterpart funds amounted to about US\$4.0 billion, bringing the total investment from these sources to about US\$9.0

billion, or approximately one-third the total estimated at the outset of the Decade. National funds, including counterpart funds for World Bank and IDB projects, were probably more than double the external funds (70% national to 30% external).

THE POST-DECADE CHALLENGES

In the coming years, the countries of the Region will need to concentrate on three priority areas in their attempts to alleviate present deficiencies and meet future demands: First, they must continue to extend water supply and sanitation services in both urban and rural areas. Second, they must improve the quality of the water distributed so that it meets minimum safety standards and ensure the proper treatment and disposal of wastewater and other wastes by developing policies and implementing programs for the integrated management of hydraulic resources. Third, they must give special attention to the optimization of existing and future services and the efficient use of water, which entails avoiding wastage, reducing water losses, and developing an ethic of water reuse and con-

servation through community education and participation.

Strategies to promote these objectives must take account of the financial limitations the countries face. For example, economical and adequate—albeit limited—services can be installed and then gradually upgraded as economic conditions in the communities allow. Financing mechanisms such as revolving funds can be developed to facilitate the channeling of resources. Greater emphasis must be placed on cost recovery to guarantee the financial life of the institutions.

In summary, the countries of the Region are advancing toward the goals of the IDWSSD, but these advances are slower than was expected, and major disparities remain among the countries. Further progress will require renewed efforts, from both the countries and the international cooperation agencies. The achievements during the Decade must be consolidated and completed, with greater attention paid to quality of water and services, wastewater treatment, and control of contamination, and especially the implications for these areas as services are expanded.



Regional Conference on Water Supply and Sanitation

As the IDWSSD came to a close, a final evaluation was needed in order to determine its achievements and limitations, and, most importantly, to provide guidance for the continuation of efforts into the 1990s. To that end, PAHO/WHO promoted the preparation of national analyses, which were carried out in 21 countries of Latin America and the Carib-

bean in 1990. In addition, it convened the Regional Conference on Water Supply and Sanitation, held from 4 to 6 September 1990 in San Juan, Puerto Rico. One hundred participants representing 23 countries as well as external support agencies met to examine achievements in the Region as a whole, as a complement to the country evaluations. Other ob-

jectives of the Conference were the following:

- To analyze and discuss alternatives for solving the priority problems that are hindering the work of the sector and its institutions.
- To identify the principal components of action plans that would ensure that the conclusions and recommendations of the Conference are made known to the relevant authorities and institutions in each country.
- To identify lines and strategies of international and bilateral cooperation and support for the formulation and execution of national programs.

The Conference was structured into four blocks of activities. The first block, consisting of three presentations followed by panel discussions, reviewed the socioeconomic and political context that existed during the Decade and its effects on development, achievement of national goals, obtainment of external technical and financial support, and other factors. Prospects for these areas in the future were also discussed.

The second block addressed the priority problems encountered during the IDWSSD, as determined by the national evaluations, and offered outlines for the formulation of solutions. Reports were presented on the need for greater recognition of the sector's importance for

health, development, and quality of life; restructuring of the sector; financial policies and the generation of resources; and the need to optimize the operation of existing services.

The third activity block consisted of subregional working groups in which the participants discussed the presentations they had heard, exchanged experiences, and considered the feasibility of enacting the suggested solutions in their respective countries or subregions. Later, participants from each country identified a plan of action that defined the steps to be taken in referring the recommendations of the Conference to the appropriate national authorities and institutions to enable formulation of plans and programs that satisfy community water supply and sanitation demands.

The fourth block dealt with analyzing and approving a joint statement prepared at the Conference, the "Declaration of Puerto Rico: Water Supply, Sanitation, and Health." The declaration calls on national governments and external support agencies to develop and cooperate with actions to strengthen and improve water supply and sanitation during the 1991-2000 period, in recognition that these actions will constitute one of the most important factors in the achievement of health for all by the year 2000 and in the overall development of the Region's countries. The text of the declaration appears below.



Declaration of Puerto Rico: Water Supply, Sanitation, and Health

WE, professionals involved in and responsible for providing drinking water

and sanitation services, who are assembled here in San Juan, Puerto Rico at the

Regional Conference on Water Supply and Sanitation, convened by the Pan American Health Organization on this, the sixth day of September, nineteen hundred and ninety;

Having evaluated the achievements of the International Drinking Water Supply and Sanitation Decade (1981-1990) in Latin America and the Caribbean, during which—despite the limitations imposed by factors internal to the sector, the economic crisis, and accelerated population growth, mainly in marginal urban settlements—significant advances in coverage were recorded, as well as conceptual and operational progress that will enhance the future development of the services;

Considering that it has not been possible to obtain total coverage of water supply in adequate quantity and quality nor of sanitation, both of which are elements of primary health care and essential to reach the goal of health for all by the year 2000;

Aware of the obstacles that have hindered universal access to these services, and the need to overcome these obstacles through vigorous, immediate action on the part of the governments, those directly responsible for providing the services, external support agencies, as well as society as a whole;

Convinced of the contribution that the water supply and sanitation sector can make to solving the increasingly overwhelming environmental and ecological problems that harm both human health and natural resources and are thus detrimental to economic development;

Cognizant of the Universal Declaration of Human Rights, which clearly establishes the right of all persons to enjoy health and well-being, implying that there should be access to basic services, notable among them drinking water and sanitation, which are inherent to human dignity,

RECOGNIZE:

- 1) That the lack of drinking water and sanitation services continues to be one of the most pressing needs of the population; that it has harmful effects on health, well-being, and development; and that, in addition, it frequently aggravates social imbalance, inequity, and dissatisfaction, constituting a serious political and administrative challenge to governments;
- 2) That the weakness observed in the sector can be traced to multiple causes, which are administrative, economic, financial, technical, and sociocultural in nature and which manifest themselves in a limited capacity to respond to unsatisfied demands, with the resulting deterioration in the sector's credibility, image, and prestige;
- 3) That one of the principal causes of the weakness found in the sector and its institutions is its inadequate organization, which gives rise to a fractionation and duplication of functions, limited coordination, and, in some cases, excessive centralization;
- 4) That sectoral planning has not been sufficient to establish realistic assessments, assign priorities, or define programs while taking into account their economic and financial implications, which makes any sustainable development of services difficult;
- 5) That it has been difficult to recover investments and that, with few exceptions, the income generated through payment for service only covers part of the current expenses for operation and maintenance, as a result of administrative deficiencies and political considerations that translate into inadequate rates and often-unwarranted subsidies;

- 6) That a deficiency in education and training at all levels, combined with low pay and a lack of professional incentives, has led to a scarcity of trained human resources, thus jeopardizing the normal operation of the sector;
- 7) That there has not been sufficient promotion of research on and application of appropriate technology, nor the development of alternative models for service that are viable in their own setting and make it possible to extend coverage on a large scale and at a low cost;
- 8) That, in general, the most attention has been given to works involving extension of service coverage, while insufficient emphasis has been placed on water potability and continuity of supply;
- 9) That wasteful water use and persistently high loss indexes are unacceptable, especially when the institutions still have to supply millions of unserved inhabitants in Latin America and the Caribbean;
- 10) That sewerage, treatment and sanitary disposal of wastewater and excreta, as well as solid waste management and pollution control, have lagged behind water supply, posing a risk to human health and resulting in environmental deterioration;
- 11) That population growth and economic development are leading to a deterioration of water resources as well as an increased demand for water, giving rise to frequent conflicts among users and making more efficient use of this resource imperative;
- 12) That cultural patterns prevail which inhibit an awareness of the value of water, the overriding need to use it rationally, and the obligation to pay realistic and fair prices for services;
- 13) That there has not been sufficient

community participation in support of the sector, because of a lack of promotion;

- 14) That the cooperation of external support agencies, which is so important to the strengthening of drinking water and sanitation services, needs to be adapted more flexibly to the conditions and characteristics of the countries, so that it can be used to better advantage;

RECOMMEND:

- 1) That the national development plans award high priority to the sectoral plan for drinking water and sanitation and that the necessary resources be assigned for these services, which are key to socioeconomic progress;
- 2) That, in order to promote effective administration, the governments set up national water and sanitation sector organizations, to work with a systemic approach, in which the state, regional, municipal, and community levels are coordinated and have well-defined responsibilities;
- 3) That as part of the above-described national sector organization there be rapid implementation of managerial and financial information systems that facilitate sectoral planning and management;
- 4) That training programs be established or intensified, taking advantage of the resources of the formal educational system as well as those found in the institutions providing water supply and sanitation services, and that improvements be made in the wages and opportunities for development of the personnel assigned to the sector;
- 5) That the sector programs give preference to population groups with lim-

ited resources who live in marginal urban areas and rural settings;

- 6) That consideration be given to adopting innovative schemes, including increased participation by the private sector, for the purpose of increasing efficiency in the comprehensive provision of services;
- 7) That there be a reaffirmation of the criterion of fairness, according to which payments reflect consumption, that rates be adopted that favor recovery of costs, and that unwarranted subsidies, especially those which are granted to persons who do not need them, be eliminated;
- 8) That programs for efficient use and conservation of water be implemented, giving preference to loss control and full use of installed capacity, with responsibility shared between the providers of the services and their users;
- 9) That the responsible authorities ensure surveillance and control of water quality, and carry out epidemiologic studies of the effects of water pollution on human health;
- 10) That preferential attention be given to extending services for sewerage and sanitary disposal of wastewater and excreta, allocating additional resources to these services so that their levels of coverage are on a par with those of water supply;
- 11) That wastewater recycling be made more effective, in accordance with sanitary criteria, in order to more efficiently use water resources, prevent environmental pollution, and allocate the highest quality water for human consumption;
- 12) That the water supply and sanitation authorities promote comprehensive water basin management and take part in conserving water resources, controlling water pollution, and protecting the environment, thus contributing to sustained development of the countries;
- 13) That management evaluations utilize indicators that assess efficiency and commercial effectiveness as well as technical aspects, including the protection of water resources;
- 14) That the community, especially women, be encouraged to participate more fully in all facets covered by the services, and that permanent health education and information programs be maintained;
- 15) That programs for handling emergency situations be implemented and aimed at preventing and mitigating the impact of natural and man-made disasters on drinking water and sanitation services;
- 16) That the exchange of knowledge and experiences by the specific agencies active in the sectoral development process be intensified, especially with regard to personnel training and technology transfer, thus promoting horizontal cooperation;
- 17) That the pertinent associations of water authorities and professionals, and in particular the Inter-American Association of Sanitary and Environmental Engineering (AIDIS), take a more active role in improving the sector and, together with the governments, raise the level of the personnel in its service and upgrade the sector's public image;
- 18) That the external support agencies expand their cooperation and adapt their regulations and requirements to facilitate the granting of loans and donations in light of the specific characteristics of each country, and in the spirit of this Declaration;
- 19) That the Pan American Health Organization increase its support and technical cooperation for the sector in

agreement with the contents of this Declaration, fostering exchange of experiences between countries, the

mobilization of external and internal resources, and periodic evaluation of the progress achieved.

WE, the participants in the Regional Conference on Water Supply and Sanitation:

COMMIT OURSELVES to disseminating this Declaration and promoting its principles and recommendations to the national authorities, the agencies and institutions within the sector, the external support agencies, and the communities we serve.

Adopted by the participants on 6 September 1990

(Original in Spanish)

