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REPORT ON PROGRESS IN CONTINENTAL WATER SUPPLY AND SEWAGE DISPOSAL PROGRAM

The Director has the honor of submitting to the Directing Council this report reflecting the progress made on programs of community water supplies and sewerage services in the Region during the first half of the Alliance for Progress Decade (1961-1966), and future projections for the second half of the Decade (1967-1971).

At the XIV Meeting of the Directing Council in Washington in September 1963, a detailed report was submitted on the activities of the Organization during the last five years in water supply and sewage disposal. At the XV Meeting of the Directing Council in Mexico City in September 1964, a comprehensive report was presented on activities of the Organization in the water supply program in rural areas, with special emphasis on the efforts made to establish national revolving funds as a means of obtaining continuity in the programs in rural areas. Further detailed reports on the progress of this program have been recorded in the Annual Report of the Director corresponding to the years of 1965 and 1966.

Unprecedented accomplishments are being recorded in the total program of improving community water supplies in both urban and rural areas. The program and the progress involve much more than the mere installation of pipes and pumps and related physical facilities. To provide continuing and lasting benefits to the people, a national water supply program requires: sound institutions for planning, designing, constructing, operating, managing and financing such systems; provision for the education and training of essential professional and technical personnel; laboratories and related facilities for the control of water quality, and for research and planning to guide the improvement and expansion of systems to meet population and industrial growth. The success of the community water program in the Region is reassured by the outstanding accomplishments in each of these interrelated segments.

The Organization responding to specific Resolutions of its Governing Bodies, has been cooperating with Member Governments in improving and expanding community water supply services; in strengthening their institutions

and administrative bodies responsible for such services; and in the training and preparation of their professional and auxiliary personnel. These areas of action are becoming increasingly important as construction and expansion of the services proceed at a higher rate of speed with financial assistance from international credit agencies and with the use of larger amounts of national funds.

The Meeting of American Chiefs of State, held in April of this year at Punta del Este, Uruguay, helped to accentuate further the necessity to achieve the goals set by the Charter of Punta del Este, and to increase the efforts of the Member Governments to provide adequate services of water supplies and sewage disposal systems to its people. It is significant that the Chiefs of State in their Declaration stated that:

> "Improvement to health conditions is fundamental to the economic and social development of Latin America. Available scientific knowledge makes it possible to obtain specific results, which, in accordance with the needs of each country and the provisions of the Charter of Punta del Este, should be utilized to attain the following objectives:
>
> "b. Acceleration of programs to providing drinking-water supplies, sewerage, and other services essential to environmental sanitation in rural and urban areas, giving preference to lower income groups. On the basis of studies carried out and with the cooperation of international financing agencies national revolving fund systems shall be used to assure the continuity of such programs."

A. Status of the Program

As has been reported previously, the Member Governments and the international credit agencies have given favorable consideration and very high priority to the utilization of funds for the construction of new systems or for the improvement and expansion of existing water supply and sewerage systems. Tables I and II show the situation as of January 1967 with respect to total funds invested in water and sewerage and benefitted population. In the last report presented to the Directing Council (September 1964) the total figure reported there for the international and national funds invested in this program was 500 million dollars; in this report the total figure is about 1,108 million dollars, which represents an increase of more than 100% during the last 3 years.

From Tables I and II it can be observed that of the total funds being invested in this program, 634 million dollars, representing 56.7%, are being provided from national sources (federal, state, municipal, local and private); the difference, amounting to 474 million dollars, has been allocated as loans by the international and bilateral credit agencies. Of the

latter amount, the sum of 353 million dollars has been provided by the Inter-American Development Bank - the largest sum allocated by a single international credit agency - showing the high priority that the Bank assigns to a program vital for the health and well-being of the people of the Americas. From Table II it can be seen that for sewerage systems, 46 million dollars have been allocated by the Inter-American Development Bank, while the countries are contributing approximately a similar amount. Although it has been impossible to differentiate the loans for water and sewerage made by the bilateral agencies, it is estimated that a total of 171 million dollars, including national funds, are being employed in the expansion and construction of sewerage systems and sewage treatment facilities.

Concerning the goals established by the Charter of Punta del Este, and referring to the urban areas (usually defined as localities with more than 2,000 inhabitants) the latest estimates show that, out of a total urban population of 123 million people, more than 75 million - representing 61% - were served with adequate water supplies. However, tabulations being made in two of the larger countries indicate that this figure of 61% will be increased to a much higher percentage (possible 69%) when such tabulations are completed.

Table III shows the situation at the end of 1965 for urban and rural areas. Of the 19 countries participating in the Alliance for Progress program, 8 have achieved the goal of providing water to 70% of their urban population, while 5 countries are relatively close (over 50% population served) to the established goal. It has been estimated that in order to achieve the entire goal by 1971, it will be necessary to provide adequate water supply to an average of 6 million people per year from 1966 onward. The progress achieved in the urban areas so far suggests that the goal for this portion of the Region's population will be attained by most of the countries by 1971.

Steady progress is being achieved in the program designed to provide the rural areas with adequate services of water supply and sewage disposal. It is significant that 8 countries have obtained loans from international sources, (all but one from the Inter-American Development Bank) for a total investment of 66 million dollars, of which approximately 50% is provided by funds of each of the countries. It is also estimated that the Latin American countries have invested over 100 million dollars more in addition to the national funds to match foreign loans. By the end of 1966, the population in rural areas was approximately 112 million, of which nearly 17 million, or 15%, had adequate water supply. It is estimated that by 1971, the rural population will be nearly 120 million of which only 14% had been provided with water services by the beginning of 1966. In other words, only 29% of the target for rural areas established in the Charter of Punta del Este had been fulfilled. To meet the target completely by 1971, an average of just over 7 million people must be provided with water services each year.

TABLE I

WATER SUPPLIES
SUMMARY DATA ON THE COMMUNITY WATER SUPPLY PROGRAM
IN LATIN AMERICA

Alliance Decade 1961 - 1971
Data as of 1 January 1967

International Loans From:		
Inter-American Development Bank	(IDB)	$ 353,160,000[a]
Agency for International Development	(AID)	65,500,000
International Development Association	(IBRD)	24,300,000
Export-Import Bank	(EXIMBANK)	31,500,000
Total International Loans		$ 474,460,000
National Funds - Including Counterpart funds to support international loans and grants		$ 633,900,000
	Total	$1,108,360,000
Number of people benefited (urban and rural)	52,000,000	

(a) Includes loans which have been approved as well as those which have been signed.

Notes: 1) Of total funds (1,108,360,000), $939.76 million are for urban centers and $168.6 million are for rural areas.

2) Total figures include small percentage for sewerage works.

TABLE II

FUNDS ALLOCATED FOR CONSTRUCTION OF WATER SUPPLY AND SEWERAGE SYSTEMS
IN LATIN AMERICA - JANUARY 1961 TO JANUARY 1967
(U.S. Dollars)

Country	International Loans					Estimated National Matching Funds
	IDB		IBRD	AID	EXIMBANK	
	Water	Sewerage	Water	Water Sewerage a)	Water Sewerage a)	
Argentina	33,730,000	2,270,000		1,400,000	-	43,030,000
Bolivia	2,600,000	-		933,000	-	972,500
Brazil	96,560,000	14,650,000		20,300,000	-	119,364,000
Chile	26,645,000	-		2,840,000	187,850	21,104,000
Colombia	27,751,397	7,233,000		8,400,000	2,275,000	38,298,600
Costa Rica	1,400,000	140,000		4,900,000	4,000,000	2,824,000
Dominican Republic	1,150,000	-		3,000,000	-	1,050,000
Ecuador	17,200,000	3,568,000		-	-	8,423,000
El Salvador	7,680,000	1,520,000		-	-	4,540,000
Guatemala	6,217,804	2,000,000		-	-	4,177,200
Haiti	2,360,000	-		-	-	350,000
Honduras	2,550,000	-		1,050,000	-	650,000
Jamaica	-	-		3,700,000	-	1,800,000
Mexico	13,474,000	550,000		-	36,000	9,296,000
Nicaragua	-	185,000	3,000,000	-	-	3,050,000
Panama	2,762,000	-		10,355,600	-	5,173,000
Paraguay	265,000	-		-	-	
Peru	9,289,539	4,371,360		8,600,000	6,623,505	13,506,000
Trinidad and Tobago	-	-		-	9,000,000	9,113,000
Uruguay	9,343,000	2,500,000		-	1,900,000	21,057,000
Venezuela	46,000,000	7,200,000	21,300,000	-	7,500,000	121,131,000
	306,977,740	46,187,360	24,300,000	65,478,600	31,522,355	428,909,300

International Loans	$ 474,466,055
National Matching Funds	428,909,300
Other National Funds	205,000,000
Total Funds	$1,108,375,355

a) See section on Sewerage and Water Pollution for estimates of funds allocated for construction of sewerage systems.

TABLE III

Estimated population (in millions) in urban and rural areas, with number and percentage of population served in 20 Latin American countries - 1965

Country	TOTAL POPULATION					URBAN					RURAL				
	1965			1971		1965			1971		1965			1971	
	Population	Population Served	% Population Served	Estimated Population	Pop. Serv. 1965 / Population 1971	Population	Population Served	% Population Served	Estimated Population	Pop. Serv. 1965 / Population 1971	Pop. Serv. 1965 / Target 1971	Population	Population Served	% Population Served	Estimated Population	Pop. Serv. 1965 / Population 1971	Pop. Serv. 1965 / Target 1971
Argentina	21.71	13.11	60	24.07	55	16.10	12.22	76	17.90	68	98	5.61	0.89	16	6.17	14	29
Bolivia	3.71	0.64	17	4.06	16	1.30	0.51	39	1.42	36	52	2.41	0.13	5	2.64	5	10
Brazil	82.30	23.60	29	98.57	24	40.59	18.13	45	55.30	33	47	41.71	5.47	13	43.27	13	25
Colombia	18.08	8.35	46	21.78	38	9.61	6.80	71	12.80	53	76	8.47	1.55	18	8.98	17	34
Costa Rica	1.46	0.93	64	1.84	51	0.51	0.51	100	0.65	77	109	0.95	0.42	44	1.19	35	70
Chile	8.67	4.55	50	10.03	45	5.96	4.20	70	7.65	55	79	2.71	0.35	13	2.38	15	29
Cuba	7.63	3.35	44	8.55	39	4.24	3.23	76	5.10	63	91	3.39	0.12	4	3.45	4	7
Dominican Republic	3.56	0.79	22	4.36	20	1.19	0.46	39	1.60	29	41	2.37	0.33	14	2.76	12	24
Ecuador	4.80	1.52	32	6.05	25	1.83	1.18	64	2.35	50	72	2.97	0.34	11	3.70	9	18
El Salvador	2.80	1.31	47	3.30	40	1.10	0.72	66	1.34	54	77	1.70	0.59	35	1.96	30	60
Guatemala	4.43	1.33	30	5.31	25	1.52	0.83	55	2.04	41	58	2.91	0.50	17	3.27	15	30
Haiti	4.57	0.35	8	5.15	7	0.73	0.24	33	0.93	26	37	3.84	0.11	3	4.22	3	5
Honduras	2.22	0.50	23	2.65	19	0.52	0.36	69	0.68	53	75	1.70	0.14	8	1.97	7	14
Mexico	40.70	19.18	47	49.10	39	22.30	15.65	70	29.02	54	77	18.40	3.53	19	20.08	18	35
Nicaragua	1.64	0.34	21	1.94	18	0.68	0.32	47	0.87	36	52	0.96	0.02	2	1.07	2	4
Panama	1.23	0.52	42	1.48	35	0.50	0.42	84	0.60	70	100	0.73	0.10	14	0.88	11	23
Paraguay	1.95	0.28	14	2.30	12	0.69	0.17	25	0.82	21	30	1.26	0.11	9	1.48	7	15
Peru	11.25	3.18	28	13.35	24	5.25	2.90	55	6.65	44	62	6.00	0.28	5	6.70	4	8
Uruguay	2.72	1.54	57	2.92	53	1.97	1.38	70	2.13	65	92	0.75	0.16	21	0.79	20	40
Venezuela	8.91	6.65	75	11.23	59	6.01	4.60	76	8.29	56	79	2.90	2.05	71	2.94	70	140
TOTAL	234.34	92.02	39	278.04	30	122.60	74.83	61	158.14	47	68	111.74	17.19	15	119.90	14	29

In regard to these programs of water supply services for rural areas, it is to be recalled that the Recommendation A.6 of the Task Force on Health at the Ministerial Level (Washington, D.C., April 1963) recommended that the Organization study the possibility of establishing a mechanism whereby international loans might be obtained for the creation of national revolving funds in the countries, to be used for the supplementary financing of potable water supply and other rural welfare projects in suitably-organized rural communities. This recommendation was confirmed by the Governing Bodies of PAHO in their meetings of the same year. This proposal received further approval by the Second Annual Meeting of the Inter-American Economic and Social Council in São Paulo, November 1963, by Resolution 19-M/63 at the Ministerial Level, and suggested that the Inter-American Development Bank and PAHO undertake the necessary financial and technical assistance arrangements to establish revolving funds in the countries to promote rural activities.

Based on such mandates and in order to insure additional investments and continuity of the programs in the rural areas, with only initial international type of loans, the Organization has continued its efforts to promote the establishment of national revolving funds. Funds of this type have been established already in Argentina, Brazil (for larger communities than the usual rural ones), Costa Rica and Honduras. Legislation to such effect has been approved in Colombia, and a new program with the participation of the Inter-American Development Bank will establish a national revolving fund for rural water supplies in the Dominican Republic in 1967. In addition, during the last three years, PAHO has been giving priority attention to rural water supply problems in Latin America. The Organization has been working in close collaboration with other international and bilateral agencies such as IADB, AID, UNICEF and others, resulting in significant achievements. However, new approaches will be needed to meet the demands of the peoples and to approach the target of the Charter of Punta del Este. In this respect, the creation and successful operation of revolving funds is expected to be a practical solution - not only for the water supply programs, but for many other health related projects in the rural areas. This approach is explained in the document entitled "Proposal for Improving the Well-being of Rural Peoples - Community Water Supplies - A Discussion of Financing" (Doc. ES/CWS/67-1, Annex I). This document is a revision of ES/RW-I, 18 March 1964, presented at the Council on its XV Meeting at Mexico City.

As noted in Annex I, the Organization has documented the criteria, approaches, and suggested procedures for developing such national revolving fund mechanisms. The suggestions offered are quite flexible, to permit adaptations to fit local conditions and policies. It may be desirable - as suggested in the Declaration of Chiefs of State - to include both rural communities and small cities in the revolving fund plan. This would broaden the benefits of the revolving fund and would provide a more reliable clientele under the system. The management and administration of a national revolving fund mechanism will require an organization structure, which in some

countries, may be too expensive to handle rural communities (exclusively). However, the decision must be made in each country with respect to the type of mechanism to be employed and the coverage it is to provide.

B. Advisory Services of the Organization

Since the last report presented to the Directing Council in 1964, the Organization has continued to provide increasing advisory service to the Member Governments. This has been provided in almost every field of water supply and sewerage programs, such as planning, financing, management and administration, design, construction, operation and maintenance, and others.

A field of increasing importance is related to management and administration of water and sewerage services and agencies. The need for action in the management and administrative fields to strengthen and rationalize the administration of water institutions in Latin America, has been felt in all the countries, as new sources of financing have been made available for the construction of improved water facilities. Since 1964, a new approach has been developed for providing such advisory services, requiring an integrated team effort to review and implement changes in the closely interrelated disciplines that make up the managerial and administrative fields. This team approach has been successfully utilized in providing services to the National Water Authority of Honduras (May 1965), Water Authority of Managua, Nicaragua (June 1965), National Water Authority of El Salvador (March 1966), National Water Authority of Uruguay (October 1966), National Water Authority of the Dominican Republic (April 1967), and the Ministry of Development and Public Works of Peru (June 1967). Still pending for immediate and future action are 20 requests for national and local services to be provided with this type of cooperation.

Advisory services of the Organization have been provided during 1966, thru 55 permanent sanitary engineers and by more than 110 short-term consultant missions. The training and educational aspects of this assistance is shown in the organization and execution, during 1966, of 60 short intensive and specialized courses and 7 seminars, in 18 countries with the participation of 1,831 professionals and 343 national lecturers and 81 international consultants. Annex II appended to this document gives the list of the courses and seminars, with other details, held during 1966. In addition, the Organization continued collaborating with post-graduate courses in Sanitary Engineering in Argentina, Brazil, Guatemala, Mexico and Venezuela and in the strengthening of the teaching of water and sewerage subjects at the regular Civil Engineering courses at many universities. Two significant projects, with the financial assistance of the United Nations Development Program, are being carried out in Brazil and Venezuela for teaching and research in Sanitary Engineering. Four research projects, with technical and financial assistance of the Organization in important water related problems, are currently conducted in Brazil, Mexico and Peru.

C. Future Projections

It is obvious that significant progress has been made in providing Latin American countries with water supply services during the first half of the Decade. If the present rate of construction is maintained, the objectives of the Charter of Punta del Este for urban areas should be attained by 1971. It is expected that urban water supply activities will be increased even more during the years ahead, and it is evident that the Organization must increase its assistance in improvement of institutions and managerial structures. It will also be necessary to extend the benefit of water supply services to the fringe areas that surround the large urban centers in Latin America. Usually a large proportion of the population of such fringe areas lack the basic services.

Reaching the goal established by the Charter of Punta del Este for the rural areas will require a truly impressive effort in the next five years. Administrative and financial mechanisms, utilizing the experience in the urban areas, must be developed for the investment of the nearly 800 million dollars required to provide water services for approximately 40 million inhabitants, who must be served if the goal is to be reached. In line with the mandates of the Directing Council - now strongly supported in the Declaration of the Chiefs of State at the summit meeting at Punta del Este, April 1967 - the Director proposes an accelerated effort by the Organization on rural water supplies. This effort should stimulate and support national rural water supply programs and will encourage efforts to strengthen community organization; to establish local cooperatives featuring the "self-help" concept; and, to develop national revolving fund mechanisms to provide continuing financial support to local areas. The Organization will continue its close collaboration with the international lending agencies to encourage and stimulate these institutions strongly to support programs in rural areas with those characteristics. It is hoped that national and international technical assistance and lending agencies will increase their support and assistance to these programs. Hopefully, the fruits of this gigantic and arduous task, namely, the improvement of the health and well-being of the rural peoples of Latin America, will be harvested at an increasing rate during the five years ahead.

It is highly unlikely that the goals to be established in the Charter of Punta del Este for rural and urban sewerage services can be met in the Alliance Decade. However, the need for such services is becoming much more acute with expanding populations in greater concentrations in urban centers. The Director proposes, in the second half of the Alliance Decade, to increase the Organization's resources for and attention to this problem.

In terms of the Alliance goals: by 1971, sewerage services - either new or improved - will be needed by some 80,000,000 urban and 60,000,000 rural populations. The capital investment represented by this expansion is approximately $300-to-$500 million per year (Ten year period). These

figures do not take into consideration sewerage and industrial-waste treatment costs. In realistic terms, it must be expected that there will be some deterioration of surface waters as a result of inadequate treatment of sewerage and industrial wastes. To prevent water pollution below the major outfalls of urban areas would necessitate an additional expenditure of more than $200 million per year over the next ten years.

In response to Resolutions XXI and XXII of the XV Meeting of the Directing Council in Mexico City in 1964, the Director is giving additional attention and broader assistance to Member Governments on the problems of air and water pollution. Thus far, this assistance - in response to official requests - has been focused on individual cities or in areas of pollution. For all countries, the Organization will attempt to cooperate with Governments in strengthening investigation and research activities to determine permissible levels that would not endanger the health, economic, and related values of surface waters.

Annexes

"COMMUNITY WATER SUPPLIES
A Discussion of Financing"

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A Discussion of Financing"

PROPOSAL
FOR
IMPROVING THE WELL-BEING OF RURAL PEOPLES

COMMUNITY WATER SUPPLIES
A Discussion of Financing

PAN AMERICAN HEALTH ORGANIZATION

Washington, D.C.

January, 1967

ES/CWS/67-1

RURAL COMMUNITY WATER SUPPLIES

A Discussion of Financing

Domestic water supplies are essential to the health, social and economic well-being of peoples. Such supplies are basic to the program of reducing infant mortality and extending life expectancy.

The shape of the future rural habitat in Latin America can no more be left to chance than can the urban habitat. The satisfactory economic and social development of a country depends upon providing the same kind of attention to the more basic problems of man in his rural environment as we are now promoting for the more sophisticated problems of man in his cities. We have not been providing this kind of balanced attention. Consequently, a backlog of need has accumulated in the rural areas. This is clearly true in the case of water supply for rural communities. To take care of the rural water-supply backlog and bring the situation into reasonable balance by the end of the Alliance-for-Progress Decade, special new measures must be taken.

This document discusses background --including progress toward the rural water-supply goals established in the Charter of Punta del Este. It points out the need for a more concerted effort on the Rural Water Program, and it proposes a funding mechanism to support a system of national revolving funds. The latter funds will be used, first, for loans to qualifying communities to construct water systems and, subsequently (after becoming self-sustaining), for related community improvements.

The rural water proposal has three key objectives: First, to provide impetus to the program and accelerate construction over the second half of the Alliance Decade; second, to strengthen community organization and to develop more fully the self-help potential; and, third, to establish, in each country, a self-sustaining funding mechanism.

One of the most encouraging aspects of the rural water-supply program is the enthusiasm and realism with which the communities have faced up to their responsibilities. The people have come to recognize the value of a domestic water supply. They want --and are willing to pay for-- water service.

Introduction

The Governments of Latin America established for themselves, in the Charter of Punta del Este, a highly commendable goal --water services to 70% of the urban and 50% of the rural population. This action indicates the firm determination of Governments to improve the well-being of their peoples. Remarkable progress toward meeting these goals has been made. At mid-decade, progress toward the goal for urban areas is on schedule. The rural program, however, is less advanced.

In Latin America, the rural-urban migration is taking place much faster than urban employment opportunities are being created. This is unfortunate from the standpoint of both rural and urban development. One of the ways in which this rural-urban population flow may be diminished, and the agricultural economy thereby strengthened, is by providing more of the amenities of urban living for rural communities. Foremost among such amenities are safe, convenient water-supply services.

The conviction remains that water supplies can be provided, as set forth in the Charter. It has become apparent, nevertheless, that the nature and magnitude of the effort must be changed significantly --and soon-- if the goal for rural communities is to be realized. There must be great willingness on the part of all concerned to develop new administrative and financing arrangements; to revise standards; to encourage innovation; and to make the hard choices necessary to accelerate the present effort.

Background

In 1963, PAHO completed a study of rural water-supply needs in Latin America and developed a proposal for action --including the establishment of a special fund for rural well-being. The PAHO plan featured the creation of a national revolving fund in each country which was to be used, first, for water-supply loans to communities, but which was also, in time, to assist in the financing of other rural environmental improvements. Such loans to communities were to be conditioned on full community participation and self help; the establishment of local water co-ops with sound management; and assured repayment to the national revolving fund. The program's objectives were to meet the goals established in the Charter of Punta del Este.

Support of the concepts advanced in the PAHO plan was given by its Governing Bodies (Directing Council Resolution XX, 23 September 1963). The PAHO proposal was also considered favorably by the Second Annual Meeting of IA-ECOSOC in São Paulo in November 1963 (Resolution XIX-M/63, at the Ministerial level). These supporting resolutions are appended.

Current Status of Rural Water Supply

The program of providing water services in small towns and villages lags far behind similar programs for metropolitan centers. This disparity between urban and rural progress is not, of course, surprising. Logistics for providing materials and supplies, construction, management, and financing are considerably more involved in scattered rural communities. However, new techniques in community organization, new materials, improved methods of construction, better transportation --if properly applied-- should more than offset these obstacles.

Thus far in the Alliance Decade, the Governments have committed more than $1 billion for community water supply, of which about $175 million is for systems in rural areas, where these improvements are benefiting 15,000,000 people in some 20,000 small towns and villages. In general, communities with populations up to 2,000 are considered rural; in some countries, the figure is higher. In order to meet the goals of the Charter of Punta del Este (50% of the rural population served by 1971), water services must be provided for 40,000,000 people in some 50,000 communities within the next five years. This is an ambitious goal. It will take an ambitious effort, maximum use of our experience, and new developments to meet it.

During the past two years, PAHO has been promoting the concept of a mass, "assembly-line" method of approach to rural-community water supply --rather than the project-by-project approach formerly used.

In terms of loans for financing rural water, this concept is now being followed in eight countries. However, the concept is not followed in terms of survey, design, and construction practices.

Over the past three years, PAHO has been giving priority attention to community water-supply problems in Latin America. The Organization has been working in close collaboration with IADB, AID, UNICEF, and other agencies assisting on rural-development programs. This composite effort --particularly the loan assistance by IADB-- has made possible the significant achievements. However, the expanding population and increasing needs of the people require more concerted effort over the second half of the Alliance-for-Progress Decade.

Proposed Program

PAHO proposes a more concerted effort to embrace the following:

1. The establishment of a special international funding mechanism, to improve the health, social, and economic conditions in rural communities --with primary focus on providing community water supplies.

2. The international fund would be available to the Governments, on a matching basis, for the establishment of national revolving funds.

Two specific conditions would be established with regard, first, to the creation of a national revolving fund (including international funds); and, second, for making loans from the national revolving fund to qualifying communities.

1. Conditions for eligibility for a loan from the international fund for setting up a national revolving fund:

   a. Establishment of a national revolving fund.

   b. Existence of a duly authorized agency capable of administering the fund, and preferably with experience in the design, construction, operation, and maintenance of the facilities to be financed by the revolving fund. If the agency does not have such experience, there should be a well-defined relationship with an organization which does.

   c. Agreement by the national Government to match the money loaned by the international funding source. The national revolving fund would be comprised of both an international loan (or grant) and the national funds.

   d. A plan of operation embracing the principle of construction by groups of communities --using "assembly-line" methods-- with types of systems and design capacities consistent with the economics of the areas served.

e. International loans to support the national revolving funds should be at minimum interest and maximum years for repayment (with an appropriate grace period).

f. The national revolving fund to make loans to qualifying communities to cover a percentage of the cost of the individual system, such percentage to be determined by the national revolving-fund agency, in consultation with the community concerned.

g. The national revolving fund to loan money for a project on the basis that such loan would be repaid, within a stipulated period of time, at a determined rate of interest.

2. Criteria for the selection of communities eligible to receive loans from the national revolving fund:

a. Existence of an appropriately constituted local cooperative, or similar organization, suitably organized to operate, maintain, and manage the system efficiently and authorized to establish water rates and collect charges.

b. Establishment of realistic water rates by the community for the consumers to be served by the system. Unless otherwise provided by the Government, such rates must cover loan repayment to the national revolving fund and costs for operation and maintenance.

c. Demonstration of the community's ability to:

(1) Finance a percentage of the project cost, such percentage to be agreed upon jointly with the national revolving-fund agency;

(2) Repayment to the national revolving fund of the loan (with interest) within a stipulated time period.

Discussion of the Plan

This proposal does not include a specific method of establishing the Special International Fund. General support for establishing such a fund will depend largely on acceptance of the plan by the Governments and their assurance of providing the national financial and administrative resources to carry out the plan. There are three possibilities for international funding:

a. Use of line credits for loans from existing international lending agencies (IADB, AID, etc.);

b. Quota contributions from the Governments on the formula basis established for regular budgets;

c. Voluntary contributions from Governments.

While the scope of the plan is to be continent-wide in its ultimate application, it is unrealistic to anticipate that all countries would start simultaneously. The status of the rural water program, at present, is such that some 15 countries could adjust quickly to this accelerated program and apply for loan funds. The program would concentrate on the self-help concept, on community organization, and on sound management procedures.

As its name indicates, the proposed revolving fund would be replenished primarily, or entirely, by payments from the benefiting communities upon completion of project construction. Prime emphasis would be placed on water revenues received as a means of repaying loans from local funds; however, other sources

for local repayment would not be overlooked, if special conditions favored their use. The revolving fund is the key element of the program, since it would, in effect, be an instrument of social policy, designed to mobilize community resources on a self-sustaining basis.

Contributions to the revolving funds, in the form of payments from provincial and national appropriations (in addition to such direct subsidization of construction as might be made), would not be ruled out; but, again, emphasis should be on making the water systems self-sustaining enterprises. Under normal terms of international development-loan contracts, national Governments would assume responsibility for repayment. National Governments should consider repayment of the international loan from current revenues. This would leave intact the revolving-fund mechanism and would shorten the time for the fund to become self-sustaining.

Each participating country would have to make appropriate legal and administrative arrangements to establish the national revolving fund. Financial administration could be entrusted to a national bank, an existing water authority, or a ministry; or an entirely new and separate administrative entity might be required by local conditions.

The replenishment of revolving funds --which permits successive series of rural welfare projects-- understandably will vary according to the repayment schedules established by the respective countries. Community repayment to the revolving fund normally will begin soon after the system is installed. To be successful, the system should have a high percentage of house connections. Accordingly, house connections should be made as the system is installed, either as a part of community participation or through the community loan. The interest rate charged to the community on loans from the revolving fund is a key factor in the growth of the fund. This rate is likely to vary among countries and even within a country, to take into account widely divergent economic conditions.

To compensate for inflation, water rates would be expressed as a percentage of the local area's minimum-wage scale, or geared to changes in consumer-price levels. Water rates for low-income customers should be less than 5% of family income.

Notations on Revolving Fund

The revolving fund is a special fund established for specific purposes. To ensure fulfillment of these purposes, provisions for the protection of the fund should be made at the time the fund is established.

Obviously, in order to succeed, the revolving fund must be assured of loan repayments, plus interest. The period of repayment of loans by communities, as well as the interest rate, must be in balance with the economics of the communities. Where international

loans are involved, the amortization period, and the interest rate for such loans, must be based on terms which will support the success of the revolving-fund system.

It is impractical to expect the revolving fund to be implemented fully the first year. There will be delays in establishing administrative procedures and policies; in developing construction plans; and in mobilizing manpower and materials. Accordingly, in the initial stages, the number of loans to communities will be fewer than the full potential of the revolving fund. These delays will affect the volume of repayments to the revolving fund in the early years.

The concept of a national revolving-fund mechanism is not new as a means of financing public improvements. However, the use of such a mechanism for financing rural-water supplies will be new to most countries in Latin America. Accordingly, it is impractical to predict the volume of international-loan demand which might be made by the Governments. During the first five years, such loan requests --in total-- would, in all likelihood, average less than $40 million per year.

To establish and administer a national revolving-fund mechanism will be a major task for most countries. Should a Government so request, it might be practical for an international lending agency to assist in organizing and administering the revolving fund --at least during the initial stages.

Table I and its accompanying notations provide an example of how such a revolving fund might operate.

Explanatory Notes for Table I

1. Table I is included for purposes of illustration only. Over a five-year period annual increments of 2 million dollars (national plus international) were chosen for ease of presentation and should be varied to meet the actual situation and needs.

2. International funds shown in Column 2 may be either grants or loans. If they are loans, repayment may be made after the agreed grace period from (a) national budget funds thus leaving intact the national revolving fund as tabulated in Columns 4 and 6; (b) income derived from repayments by communities to national revolving fund, in which case the revolving fund would be depleted accordingly; (c) a combination of (a) and (b).

3. National government funds (grants) shown in Column 3 include funds from the national government or a combination of funds from the national and state governments.

4. The funds available in the national revolving fund for loans to communities (Columns 4 and 6) are composed of funds from international sources (Column 2) national government (Column 3) and repayments from the communities to the national revolving fund (Columns 5 and 7).

5. Repayments from the communities to the national revolving fund (Columns 5 and 7) are for the conditions shown in the column headings. These are based on the assumption that (a) the amounts available for loan in the national revolving fund (Columns 4 and 6) are loaned each year, and (b) that the communities benefited will maintain on schedule their repayments to the national revolving fund. Obviously, this ideal situation will not prevail. There may be delays in establishing the fund; in making loans; in completing construction; in making house connections; and developing routine payment of water rates, etc. To the extent that these occur, the amounts shown in Columns 4, 5, 6 and 7 will be reduced accordingly.

6. The size and rapidity with which the revolving fund will develop depends basically on the following financial factors: (a) the conditions under which the funds are obtained to establish the national revolving fund; (b) the conditions under which this money is loaned to the communities, for example:

   (a) With amortization at 15 years-5% (Columns 4 and 5) $2,000,000 per year over a five year period will produce

$46 million construction and provide a $3.2 million revolving fund after twenty years.

(b) With amortization at 25 years-5% (Columns 6 and 7) $2,000,000 per year over a five year period will produce $32 million construction and provide a $2.1 million revolving fund after twenty years.

7. Amortization conditions used (15 and 25 years-5%) may be modified to fit local conditions.

TABLE I* - NATIONAL REVOLVING FUND (NRF) - GENERAL FINANCIAL PLAN

Based on Increment of $2 Million Program (each year for five years)

Year	International Source Funds to NRF	National Government Funds to NRF	Amortization of 100% of Cost 15 years at 5%		Amortization of 100% of Cost 25 years at 5%	
			Amount Available in NRF for Loans to Communities (2)+(3)+(5)	Repayments from Communities to NRF	Amount Available in NRF for Loans to Communities (2)+(3)+(7)	Repayments from Communities to NRF
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1,000,000	1,000,000	2,000,000	-	2,000,000	-
2	1,000,000	1,000,000	2,193,000	193,000	2,142,000	142,000
3	1,000,000	1,000,000	2,405,000	405,000	2,294,000	294,000
4	1,000,000	1,000,000	2,637,000	637,000	2,457,000	457,000
5	1,000,000	1,000,000	2,891,000	891,000	2,631,000	631,000
6			1,170,000	1,170,000	818,000	818,000
7			1,283,000	1,283,000	876,000	876,000
8			1,407,000	1,407,000	938,000	938,000
9			1,543,000	1,543,000	1,005,000	1,005,000
10			1,692,000	1,692,000	1,076,000	1,076,000
11			1,855,000	1,855,000	1,152,000	1,152,000
12			2,034,000	2,034,000	1,234,000	1,234,000
13			2,230,000	2,230,000	1,322,000	1,322,000
14			2,445,000	2,445,000	1,416,000	1,416,000
15			2,681,000	2,681,000	1,517,000	1,517,000
16			2,940,000	2,940,000	1,615,000	1,615,000
17			3,031,000	3,031,000	1,730,000	1,730,000
18			3,111,000	3,111,000	1,853,000	1,853,000
19			3,179,000	3,179,000	1,980,000	1,980,000
20			3,232,000	3,232,000	2,126,000	2,126,000
Total	5,000,000	5,000,000	45,959,000	35,959,000	32,182,000	22,182,000

* Illustration of the mechanics of a revolving fund under two sets of conditions. Explanatory notes on preceeding page.

RESOLUTION XIX-M/63 [1]

CONTINENT-WIDE PROGRAM OF RURAL, ENVIRONMENTAL HEALTH AND WELL-BEING

WHEREAS:

The document on the establishment of a continent-wide program of rural environmental health and well-being (OEA/Ser.H/X.4, CIES/341) has been examined;

Rural environmental health is important to the economic and social development of the rural population of the Americas;

One of the objectives set forth in the Charter of Punta del Este was to supply potable water and sewage-disposal services for at least 50 per cent of the rural population during the present decade;

Resolution A-11 of the First Annual Meeting of the Inter-American Economic and Social Countil at the Ministerial Level recognized the need to intensify efforts to improve living conditions in rural areas and to obtain international credits for the development of programs for this purpose;

The program received firm support at the Meeting at the Ministerial Level of the Task Force on Health (Washington, April 1963), the Eighth Meeting of Ministers of Health of Central America and Panama (San José, July-August 1963) and the XIV Meeting of the Directing Council of the Pan American Health Organization (Washington, September 1963); and

Due account has been taken of the recommendations contained in the Report of Special Committee VII (Health Group) of the Inter-American Economic and Social Council (San Jose, August 1963),

The second Annual Meeting of the Inter-American Economic and Social Council at the Ministerial Level

RESOLVES:

1. To recognize the importance of the problem of supplying potable water in rural environments, within the context of over-all rural development, and to recommend to the member states that they assign high priority to programs aimed at solving these problems.

1/ Pages 32-33 of the Final Report of the Second Annual Meeting of the IA-ECOSOC at the Ministerial Level, Document OEA/Ser.H/X.4, CIES/580, Rev. of 6 Dec. 1963.

2. To recognize the necessity of developing the Continent-wide Program of Rural Environmental Health and Well-being along the lines set out in Document OEA/Ser.H/X.4, CIES/341, based on the participation of the communities, the establishment of national revolving funds, and contributions of external funds, with a view to achieving the objectives set forth in Resolution A-2 appended to the Charter of Punta del Este.

3. To suggest that, after consultation with the interested countries, the Inter-American Development Bank undertake the responsibility for the administration of external financial resources, and, that the Pan American Sanitary Bureau undertake the responsibility for supplying technical advice to the governments at each stage of the program, and to suggest to both these organizations, that, with the cooperation of other interested agencies they study and establish appropriate procedures and relations that will make it possible to begin the program, it being understood that each government shall choose the appropriate time to begin the program, in accordance with the socioeconomic situation of the respective country, bearing in mind, in all cases, the social capacity for absorption of this type of investment of the communities that are to benefit.

4. To suggest to the Pan American Health Organization the appointment, in collaboration with the Inter-American Development Bank, of technical committees, to provide them with advisory services on financing, organization, community motivation, and other aspects of the program.

5. To recommend to the governments of the member states that they establish, and make proper legal and financial provision for, the most adequate and competent organization to administer the program at the national level.

6. To recommend to the governments that they adopt the necessary financial measures that will enable them to select and organize the communities for beginning this program as soon as possible.

RESOLUTION XX [1]

ESTABLISHMENT OF A RURAL WELFARE FUND

THE DIRECTING COUNCIL,

Having examined the report of the Director on the establishment of a rural welfare fund (Document CD14/23);

Bearing in mind the importance of environmental sanitation to the health and social and economic development of the rural population of the Americas and the target established in the Charter of Punta del Este of supplying water and sewage disposal services to at least fifty per cent of the rural population in the decade;

Mindful of Resolution A-11 of the First Annual Meeting of the Inter-American Economic and Social Council at the Ministerial Level (Mexico City, November 1962) which recognized the need to intensify efforts to improve living conditions in rural areas and to obtain international credits to develop programs for that purpose, and

Noting the support for such programs expressed by the Task Force on Health at the Ministerial Level (Washington, D.C., April 1963), by Resolutions IV and XIII of the 48th Meeting of the Executive Committee (Washington, D.C., April 1963), by the VIII Meeting of Ministers of Health of Central America and Panama (San Jose, July-August 1963), and by Committee VI of the Inter-American Economic and Social Council (San Jose, August 1963), and in view of the favorable opinion and the unanimous approval of the Members of the Council at its XIV Meeting,

RESOLVES:

1. To approve the rural health program along the general lines described in Document CD14/23, and based on community participation, establishment of national revolving funds, and the need for international capital contributions.

1/ XIV Meeting of the Directing Council of PAHO, Document CD14/40 (Eng.) pp. 28 and 29. (Resolution approved at the tenth plenary session, 23 September 1963)

2. To urge the Director to seek assistance from all possible sources for implementation and financing the program, including the Governments and the international development and credit institutions.

3. To recommend that the Director appoint a Technical Committee to give advice on financing, community organization and motivation, and other aspects of the program.

4. To recommend that Member Countries establish competent organizations to take charge of the execution of the national programs.

SHORT COURSES, SEMINARS, AND SYMPOSIA IN SANITARY ENGINEERING HELD IN COOPERATION WITH UNIVERSITIES, 1966

SHORT COURSES, SEMINARS, AND SYMPOSIA IN SANITARY ENGINEERING HELD IN COOPERATION WITH UNIVERSITIES, 1966

Place	Date	Subject	Duration Hours	Faculty Nat.	Faculty Inter.-Nat.	Persons Trained
ARGENTINA:						
University of Buenos Aires	11-29 Oct.	Rural Water Supply	101	9	5	47
	13-23 Jul.	Water Pollution	62	8	1	23
	22 Aug.-3 Sept.	Design of Rural Water Supplies	73	8	1	12
	12-17 Sept.	Industrial Hygiene Part II	39	5	1	22
	3-7 Oct.	Sanitary Aspects of Housing	35	9	2	35
	28 Nov.-3 Dec.	Municipal Refuse: Collection and Disposal	44	4	2	31
	12-21 Dec.	Operation of Sewage Treatment Plants	51	8	-	26
BOLIVIA						
Universidad Mayor de San Andres, La Paz	23 May-5 June	Design of Small Water Supplies	50	8	2	27
	26 Sept.-15 Oct.	Ground Water	102	7	2	23
BRAZIL						
Bahia University, Salvador	11-22 Apr.	Design and Construction of Water Supply Distribution Systems	60	6	-	19
Geara University, Fortaleza	1-31 Aug.	Ground Water Development	156	5	2	25
Paraiba University, Campina Grande	11-16 Jul.	Seminar on Sanitary Engineering Education in the Northeast of Brazil	34	-	-	39
Paraiba University, Curitiba	23 May-4 June	Water Quality	58	7	1	16
Recife University, Pernambuco	6-18 June	Water Rates and Accounting	60	4	1	19
Sao Paulo University, Sao Paulo	13-25 June	Pumps and Pumping Stations in Water Supply	55	16	-	33
	22 Aug.-2 Sept.	Seminar on Sanitation and the National Housing Program	34	-	-	55
	28 Nov.-3 Dec.	Air Pollution	34	12	1	40
Sanitary Engineering Institute (SURSAN) Rio de Janeiro	16-20 May	Bacteriological Analysis of Water and Wastes	35			18
	13-24 June	Administration and Operation of Water and Waste Systems	72			20
	22 Aug.-2 Sept.	Application of Statistical Methods to Sanitary Engineering Problems	70			26
	21 Nov.-2 Dec.	Physical and Chemical Analysis of Water and Waste Water	76	17	-	10

Place	Date	Subject	Duration Hours	Faculty Nat.	Faculty Inter.-Nat.	Persons Trained
	5-16 Dec.	Elements of Air Pollution Control	72			22
	5-9 Dec.	Organization of Training Programs	12	-	1	20
		Operation of Swimming Pools (2 courses) in Rio de Janeiro and Brasilia				51
		Seminar on Environmental Contaminants				35
		Seminar on Industrial Waste				26
COLOMBIA:						
Los Andes University, Bogota	18-29 Apr.	Use of Computers in Sanitary Engineering Problems	65	4	-	8
	26 Sept.-11 Oct.	Manual Systems in Planning and Control of Construction	66	2	1	15
National University of Colombia, Bogota	21 Mar.-1 Apr.	Programming Methods as applied to Sanitary Engineering	65	3	-	11
	4-11 July	Water Fluoridation	65	7	2	13
	14-25 Nov.	Meters and House Connections	66	5	-	22
National University of Colombia, Medellin	29 Aug.-10 Sept.	Multiple-Purpose River Usage	50	9	1	19
COSTA RICA:						
University of Costa Rica, San Jose	11-23 July	Pumps and pumping Stations	40	4	2	11
CHILE:						
University of Chile, Faculty of Physical and Mathematical Sciences, Santiago	25 May-5 June	Use of Computers in Sanitary Engineering Problems	63	7	-	30
	7-16 July	Treatment of Industrial Waste	51	11	1	25
	17-27 Aug.	Design of Sewage Pumping Stations	62	6	1	33
	20-30 Sept.	Training Course for Operators of Water and Sewage Treatment Plants	62	4	2	24
	20-29 Oct.	Rapid Filters: Modern Systems	43	7	1	40
	12-22 Dec.	Ground Water	56	5	2	36

Place	Date	Subject	Duration Hours	Faculty Nat.	Faculty Inter-Nat.	Persons Trained
University of Chile, School of Public Health, Santiago	25 Jul.-6 Aug.	Design of Water Supply and Sewage Disposal Systems for Rural Areas	61	16	1	20
	5-16 Dec.	Urban Solid Waste: Collection and Disposal	48	7	2	34
CUBA:						
Carlos Finley School of Public Health, Havana	19 Sept.-1 Oct.	Treatment of Industrial and Domestic Wastes	69	5	5	40
ECUADOR:						
Central University of Ecuador, Quito	22 Aug.-2 Sept.	Methods of Planning and Control of Sanitary Engineering Projects	60	-	1	18
EL SALVADOR:						
Autonomous University of El Salvador, San Salvador	19 Sept.-1 Oct.	Design of Water Treatment Plants for Small Communities	54	5	2	23
	19-30 Sept.	Radiation Protection	56	3	5	10
	2-15 Oct.	Industrial Hygiene and Safety	42	3	2	47
HONDURAS:						
National Autonomous University of Honduras, Tegucigalpa	18-30 July	Pumps and Geophysics	65	1	3	12
	12-24 Sept.	Design of Water Treatment Plants for Small Communities	62	5	2	18
JAMAICA:						
Ministry of Public Health, Kingston	18 July-30 Sept.	Health Education, Administration, and Supervision, and Sanitary Sciences for Sanitary Inspectors	330		1	30
MEXICO:						
National Autonomous University, Mexico, D. F.	20 June-2 July	Design and Operation of Stabilization Plants	59	4	2	16
	26 Sept.-7 Oct.	Design of Water Supply Systems for Small Communities	63	12	-	32
	17 Oct.-5 Nov.	Ground Water	146	8	2	24
	14-26 Nov.	Selection of Pumps for Water Supply Systems	76	8		31

Place	Date	Subject	Duration Hours	Faculty Nat.	Faculty Inter.-Nat.	Persons Trained
University of Nuevo Leon, Monterrey	25 July-6 Aug.	Water Meters and Leakage Searches in Distribution Systems	86	6	1	22
Department of Water Resources, D.F.	18-22 Apr.	Symposium on Water Supply and Sewage	40			200
NICARAGUA:						
National University of Nicaragua, Managua	11 July-6 Aug.	Ground Water	117	5	3	27
	31 Oct.-12 Nov.	Stabilization Ponds	27	2	1	22
PANAMA:						
University of Panama, Panama	4-23 July	Well Drilling	85	7	2	32
	4-16 July	Pumps and Pumping Stations	48	11	1	18
PERU:						
National Engineering University, Lima	11-16 July	Financing Aspects of Sanitary Works	30	2	4	18
	24 Oct.-4 Nov.	Computers in Sanitary Engineering	46	3	1	32
TRINIDAD AND TOBAGO:						
University of the West Indies, Port-of-Spain	3-8 Oct.	a) Treatment of Water and Waste Water, b) Water and Sewage Chemistry	52	6	3	23
	10-15 Oct.					
URUGUAY:						
University of the Republic, Montevideo	24-29 Oct.	Plastic Pipes in Water Supply Systems	40	4	2	24
VENEZUELA:						
Central University of Venezuela, Caracas	23 May-2 July	Operation of Water Treatment Plants	210	9	1	19
	1 Oct.-17 Dec.	Design and Operation of Pumping Stations	44	3	-	32
TOTAL		60 short courses, 6 Seminars and 1 Symposium	4,155	343	81	1,831