# WORLD-WIDE COMMUNITY WATER SUPPLY DEVELOPMENT PROGRAM SUMMARY

Health Division
Office of Educational and Social Development
Agency for International Development
Washington, D. C.

March 1962

## WORLD - WIDE

#### COMMUNITY WATER SUPPLY DEVELOPMENT

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#### A. <u>Introduction</u>

## 1. <u>Historical Background</u>

One of the major causes of debility and illness in the less developed countries is that group of diseases commonly transmitted through water. These include a variety of diarrheal and dysentaric diseases and a group of virus diseases including infectious hepatitis and poliomyelitis. A potable water supply is not only a key element in the control of these diseases but the ready availability of water contributes substantially to the reduction of scabies, lice and filth disease among population groups.

Ever since the start of technical assistance in 1942, emphasis has been placed on improving the environmental sanitation of the underdeveloped world. Much of this emphasis has been on the design and construction of potable water supply systems, but on an individual project-by-project basis. This was unsatisfactory in terms of progress and results, so the world-wide Community Water Supply Development Program (CWSDP), backstopped by the Community Water Supply Branch (CWSB), was established in FY 1960. For the first time an effective total approach became possible which was able to take advantage of the depth of U.S. professional knowledge through the use of short-term consultants and the multi-country approach. With a new central unit, AID was able to assist countries to approach the problem on a systematic and wellplanned basis and systematic collection and examination of experience was undertaken on a world-wide basis, including both failures and successes, to attempt to analyze the common denominator of these a experiences. Both U.S. and third-country research and training facilities are now being utilized to develop solutions for specific problems of water supply and sewage disposal in lesser developed countries.

The application of this technical knowledge and know-how to produce safe drinking water and make it available to all in the form of community water systems can be a major factor in social and economic development. A water system is a tangible demonstration of accomplishment; it is essential to economic progress. Only a healthy citizenry can reach its maximum potential; and safe water, free of the infective agents of a dozen different diseases, is mandatory if people are to be able to do that and to benefit from a higher living standard.

## 2. Financial Summary

Since the inception of the CWSDP in 1960 the following funds have been specifically allotted for the program:

	Actual		Budget		Budget	
	FY 1960	FY 1961	FY 1	962	FY :	1963
	SA	SA	Dev. Grants	PSP	Dev. Grants	PSP
Technical Consultation & Support					٠	
Regional advisors, short term consultant and internation travel.	s, al	130,582	98,000	40,000	115,000	100,000
Professional Development						
Seminars, short courses, univer sity contracts, etc.		244,762	. 120,000	38,000	200,000	65,000
Country Project Support	298,148	447,005			<b></b>	
TOTAL	399,726	822,349	218,000	78,000	315,000	165,000

These funds are in addition to program funds allotted to AID Missions in individual countries for direct-hire technicians, participant training, etc. Commencing in FY 1962 all country project funding was shifted to the country programs. Sizable loans are now being made from development loan funds and the IADB for water supply systems. In addition, considerable amounts of U.S. owned local currencies are being allocated for this same purpose.

#### 3. Staff

At the present time there are a total of 36 sanitary engineers and 19 sanitarians assigned as direct-hire AID staff members to the Health and Sanitation Divisions in 30 countries around the world, most

of whom are working on some aspect of the CWSD Program. In addition, four sanitary engineers are assigned as regional consultants, working on the CWSD Program primarily in the regions to which they are assigned but available on a world-wide basis when needed. (See Annex No. 1 for distribution of staff.) Nineteen of this total of 59 advisors are on loan from the Public Health Service.

The CWSD Program is backstopped and coordinated at the AID/W level by the CWS Branch, attached to ESD, composed at present of three sanitary engineers and two stenographers supplemented from time to time by short-term consultants working on special assignments. The CWS Branch serves as a central advisory point for the selection of direct-hire personnel for over-seas positions.

## B. Services Rendered

# 1. Technical Consultation and Support

The work of the regular AID staff on the CWSD Program is supplemented and augmented by the U.S. water supply experts working as short-term consultants in their several specialties on a world-wide basis. As the number of such experts are few the amount of time they have available for work outside of the United States must be rationed. This is best done when they are managed centrally on a global basis where the determining factor is not geographical or political, but the socioeconomic development of an area. These consultants become more useful in advising on the special problems of the underdeveloped countries, many of which are not peculiar to any one region, after they have had several such assignments and this investment in short-supply skills is best protected through central management of this resource.

The CWS Branch has built up a roster of consultants, is well acquainted with their specialties, their previous assignments, their availability for future assignments and their preferences. As requests are received from the various regions for consultation, the unit is able to recommend a specific person or persons and make the preliminary arrangements for the short-term assignment.

At present the two regional sanitary engineering advisors recruited specifically for the CWSD Program and financed from the funds provided for that program, namely Mr. James Caldwell stationed in Kingston, Jamaica, and serving primarily the Central American countries and the islands in the Caribbean, and Mr. Arthur Holloway stationed in Beirut, Lebanon, and serving both the Near and Far East as well as Southeast Asia, have reported to the Community Water Supply Branch which has coordinated the requests for their services. Regional cle clearances are always obtained.

#### a. Countries Served

U.S. water supply experts, both regional and short-term, have rendered consultation services on the Community Water Supply Development Program in the following countries since the start of that program on a global basis:

FY 1960	FY 1961		FY 1962		
			Continuing	New	
Lebanon	Greece	Nicaragua '	Iran	Iran	
Turkey	Iran	Panama	Lebanon .	Chile	
Yemen	Iraq	Paraguay	Brazil	Colombia	
Colombia	Jordan	Peru	Costa Rica	Guatemala	
Costa Rica	Lebanon	Uruguay	El Salvador	Honduras	
Paraguay	United Arab Rep.	Venezuela	Guatemala	Panama	
Puerto Rico	Syria	Jamaica	Honduras	Peru	
San Marino	Ceylon	Trinidad	Panama	Cameroun	
	India	Spain	Peru	Ivory Coast	
	Brazil	Yugoslavia	Jamaica	Mali Rep.	
•	Costa Rica	Ethiopia	Trinidad	Niger	
	El Salvador	Somali Rep.		Senegal	
	Guatemala	Indonesia		Upper Volta	
	Honduras	Thailand	,	Burma	

In the above listings under FY 1962 where a country is listed in both the "Continuing" and "New" columns, this indicates that consultation was continued on some phase of the water supply program on which consultation had been given in a previous year and that consultation had also been given on some new phase of the program.

#### b. Major Typed of Services

The numerous and diversified advisory and consultative services provided by the Community Water Supply Branch and the short-term expert consultants available to it are divided into five principal categories, namely:

- "A" Advisory services relating to USAID community water supply programs; to the functions, organization and training of personnel of indigenous or cooperative services handling community water supply activities; or to the mobilization of domestic resources.
- "E" Economic feasibility studies of specific water supply projects; formulation of recommended rate structures; preparation of economic reports and/or formal loan applications to the various international lending agencies.

"D" - Technical design studies; preliminary engineering surveys, planning studies; technical feasibility studies; advice relative to operation and maintenance problems, etc.

"S" - Socio-economic studies - general studies - on a nation-wide basis, of the various agencies involved in water supply planning, construction, financing, operation, maintenance and/or management; recommendations relative to legal delineation of responsibilities, consolidation and/or organization of an appropriate agency; study of existing revenues, their relation to the general cost of living, methods of collection, adequacy; recommendations on maximum use of local materials, men and facilities, etc.

"T" - Training - through use of seminars, short-courses, workshops; recommendations for use of U.S. facilities; institution of new courses to meet specific needs, especially in engineering management of water supplies; conduct of in-service training, etc.

The above-mentioned services, in mose cases supplementing the general work of full-time AID advisors assigned to the countries, have been provided to date by a small corps of 21 experts on assignments ranging from two days to six monghs. A considerable majority of the assignments have been for less than three weeks each.

# 2. Professional Development

In the field of training for the CWSD Program on a world-wide basis, the CWS Branch carries the following responsibilities: (a) establishes the need for special training programs for national participants and career development training for AID technicians through questionnaires to the US AID Missions cleared through the regional bureaus; (b) development of course content, length and timing based on results of questionnaires; (c) evaluation of possible facilities for preparation and presentation of course and selection of one to be used; (d) development with the selected facility of the technical portion of the contract which is then referred to the appropriate AID contract office for preparation in final form, negotiation and signiture; (e) setting of criteria for selection of participants and screening of applications on a world-wide basis to obtain best candidates for the limited places usually available, and (f) monitoring of the course to make sure that it meets the objectives for which it was established. The administrative processing and handling of the participants is carried out by the International Training Division which consults with the CWS Branch on the technical aspects of the course.

#### a. Short-term Training Courses and Seminars

At the request of the CWS Branch the University of Minnesota developed a special Ground Water Course of 12 weeks academic and field work which was attended in 1959 by 43 participants from 27 countries

around the world. This was repeated in 1960 and 1961 and will be continued in the summer of 1962.

To make this type of training more useful for non-English speaking participants, a similar course was developed and given in Spanish in Costa Rica in 1961 and will be repeated in 1963 both with the stimulation and financing of the CWSD Program. Similar spurses will be developed in other areas of the world in the languages of those areas. In this way regional courses are stimulated by a course that was developed for and used by participants from all the regions.

A team of experts in the engineering management of water supply systems was recruited by the CWS Branch to serve as the resource people for two regional seminars in Iran and Thailand. The seminar in Iran was attended by 47 participants from 8 countries and the one in Thailand was attended by 43 participants from 8 countries. In this way the same expert team was used as the nucleus for seminars in two different regions and reached a total of 90 participants from 16 countries.

## b. Long-term University Training Contracts

Contracts have been arranged with two universities as outlined under paragraph 2 above; one with the University of Akron for a three-month course in Engineering Management of Water Supply Systems, which will be presented three times a year during three years to 14 students per course; a second with the Pennsylvania State University for the development of five correspondence courses in water supply engineering specifically adapted for use by engineers in the underdeveloped countries.

A third contract is being discussed with another university for the development of a one-year academic - applied course in the design of water supply treatment and sewage disposal plants to provide practical training for two groups of twelve participants each for each of the next three years.

#### c. Other

The CWS Branch has cooperated with the multilateral health agencies (Fan American Health Organization and World Health Organization) in developing seminars, symposiums and courses related to the CWSD Program and in sponsoring participants to those meetings. These have included courses held in Cincinnati, Mexico City and Sao Paulo on the engineering approach to financing water supply systems; a seminar held in Montevideo on methods of establishing water rates to assure that water supply systems are self-supporting, a seminar held in Addis Ababa on the overall community water supply problem and a seminar held in Lima, Peru, on how to improve sanitary engineering education in the universities in Latin America.

Oftentimes these seminars are arranged too late for the US AID Missions to include them in their regular budgets. The CMS Branch, through close coordination with these agencies, is able to quickly provide for participation by flexible budgeting on a world-wide basis and then making specific allocations when places and times are definitely fixed by the multilateral agencies.

#### C. Services to Regions

With the initiation of the CWSD Program on a world-wide basis in FY 1960, a special CWSDP fund was established which made it possible to attack the problem with

a multi-country approach. This did much to stimulate the tremendous growth that has taken place since that time in the design, construction and requests for loans for water supply system improvement and construction. This was done not by providing pipe, valves and equipment, but by providing, from a central source and on a world-wide basis, epxert U.S. water supply consultants when and where they were needed, by assisting in the financing of overall community water supply studies, technical and financial feasibility studies, socio-economic studies, development of courses designed specifically for the needs of the program and the expert technical backstopping so necessary for an imaginative approach to the problem.

Special Assistance funds were again made available in FY 1961 for technical consultation and support, professional development and country project support. In FY 1962 funds were not allotted to the CWSD Program for country project support but in a few isolated cases were included in the country program allotments. The funds for technical consultation and professional development were provided mainly from Inter-Regional Development Grant Funds and partially from PSP.

The progress and advancement of the CWSD Program since 1960, compared with accomplishment in the previous 18 years, is proof of the value and effectiveness of a single world-wide agency unit. It is doubtful whether the results obtained in such countries as Jamaica, Costa Rica, Brazil, and Pakistan, would have been obtained so quickly if the services of the CWS Branch had had to filter through the regional country programmong process.

# D. Achievements

At this time, less than three years after the inception of the community water supply development program on a world-wide basis, evidence of the accomplishments of the program are only beginning to be apparent. These years have been spent in stimulating the underdeveloped countries to realize that stable water supply systems can be self-liquidating, that rates can be fixed that will make this possible. The lending institutions have accepted this also and the result has been that during the past year at least the following amounts have been loaned to finance new potable water supply and sanitary sewage disposal systems or additions and improvements to existing systems:

Inter-American Developme Ordinary capital Social Progress Trust Special Operations Fu	Fund `	\$	24,144,000 80,467,000 11,500,000
Export-Import Bank . I.D.A. , AID/DF PL 480		a	18,500,000 4,400,000 13,500,000 5,000,000
•	TOTAL	\$ :	157,511,000

This is more than five times the amount loaned by these institutions for this type of work in any similar period in the past. In addition to this money obtained by loans, the countries involved will contribute between 100 and 150 million dollars as the loans represent approximately 60% of the toatl cost of the projects.

This has not happened spontaneously but has been contributed to by the advisory services, the feasibility studies; the technical surveys and country-wide investigations; the assistance in design and planning; the professional development including provision of courses arranged specifically for the needs of water works design and management personnel; the preparation or advice on loan applications provided by US AID country and regional advisors as well as short-term consultants all backstopped by the CWS Branch where much of the planning is carried out for the world-wide approach that is serving as a catalyst for the CWSD Program and where the AID program is coordinated with that of the multilateral agencies.

Assistance has been given in the formation of autonomous or semi-autonomous agencies in several countries to one agency instead of several competing agencies for studies, designs, financing, construction, management and operation of water supply and sewerage systems until such time as the individual communities are capable of handling this for themselves. Such institutions have been established in Honduras, Costa Rica, El Salvador, Panama, Jamaica and other countries.

## E. Summary

The Community Water Supply Development Program of AID is assisting at an accelerated rate in the development of the technical, professional and institutional means to supply potable water in the countries around the world through the global approach instituted in FY 1960 and spearheaded by the CWS Branch.

# This approach:

- 1. Makes possible the development and best utilization of the limited number of U.S. water supply experts (both direct-hire and short-term consultants) capable of providing expert consultation on planning, organization, management, technical, legal and fiscal matters.
- 2. Provides a ready means of upgrading the capabilities of national personnel through seminars, workshops, special courses developed specifically for the needs of both U.S. and foreign technicians.
- 3. Makes it possible to grant limited funds to pilot projects where basic plans have been made and limited financial assistance can help to establish effectively the desired institution or agency.
- 4. Affords a central reservoir of knowledge to aid countries in developing sound fiscal planning, essential to preparing requests for external loans for the design and construction of self-supporting water supply systems.
- 5. Facilitates the extension from one area to another of techniques and methods that have been tried and found to be successful.
- 6. Furnishes a central point for coordinating the agency's CWSD Program with those of the multilateral agencies.

Finally, to effectively duplicate the present five-man staff of the CWS Branch would require a minimum of two persons in each region plus a residual expert and secretary to ESD or a doubling of the existing number of personnel.

AID-DIRECT HIRE.
SANITARY ENGINEERS AND SANITARIANS

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