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TECHNICAL, FINANCIAL, AND ADMINISTRATIVE ASPECTS OF  
WATER SUPPLY IN THE URBAN ENVIRONMENT OF THE AMERICAS

REPORT OF THE RAPPORTEUR

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REPORT OF THE TECHNICAL DISCUSSIONS ON THE TOPIC  
"TECHNICAL, FINANCIAL, AND ADMINISTRATIVE ASPECTS OF  
WATER SUPPLY IN THE URBAN ENVIRONMENT OF THE AMERICAS"

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The special session for technical discussions on the topic "Technical, Financial, and Administrative Aspects of Water Supply in the Urban Environment of the Americas" was held on 28 September 1959 under the chairmanship of Dr. Arnaldo Gabaldon, with Dr. Alberto Aguilar Rivas acting as rapporteur.

Following an introductory statement by the chairman, papers on the topic were presented by the special consultants designated by the Pan American Sanitary Bureau, Dr. Abel Wolman and Mr. Pedro Irañeta. These papers and the questions raised by them were then discussed by a panel group composed of the chairman and rapporteur, the two special consultants, and other experts in the organization and financing of urban water supply systems. The panel presentation was followed by general discussion from the floor.

Basic information for the technical discussion was provided through the papers presented by the special consultants, the statements made by the panel members, and reports on experiences with water supply systems in their countries submitted by the participants from Argentina, Colombia, Cuba, Curaçao, Guatemala, Mexico and Nicaragua. Various reports and information on the status and operations of the Puerto Rico Aqueduct and Sewer Authority have also been made available to the participants in the technical discussions through the courtesy of that Authority.

### Introduction

Gastro-intestinal disease ranks among the top public health problems in a majority of the countries of Middle and South America, ranking first as the leading cause of death among children from 1 to 4 years of age in 12 of the 17 countries and among the first five causes of death in the others. It is recognized that provision of good quality water in ample quantity is one of the primary mechanisms for controlling the diarrheal diseases. It is also recognized that not only the public health is benefited but that the entire economic and social complexion of a community changes when water is introduced, with benefit to housing, industry, fire protection, tourism, and labor. It is appalling to note that in many countries the rate at which water service is being supplied to the people is insufficient to cope with the population increase.

Most countries recognize the problem but find that the competition for central government funds is such as to prevent an effort beyond that now being expended. Lending agencies regard water projects as a field of limited interest because of the heavy subsidy required from the Government and because many are operated in a manner which cannot even pay for operation and maintenance, not to speak of amortization and interest costs.

Emphasis on rural projects has in the past almost exclusively occupied the attention of public health personnel whereas promotion of urban water supplies has been neglected. Only now is a general realization developing among Ministries of Health that the maximum number of people can be benefited in the minimum time at a minimum cost by working in those communities where population density is the highest. This does not suggest that the truly rural areas should be neglected but does emphasize the need for a reappraisal and at least the superimposition of a strong urban effort over and above that previously given to the rural.

#### Basic problems in community water supply development

The magnitude of the water problem and the urgency for action in solving it, when viewed as a whole, lead officials and technicians at first to a sense of frustration. Careful analysis indicates that the problem should be considered in its basic aspects concerned with administration, management, and finance. The problems concerned with each of these particular aspects may be summarized as follows:

##### 1. Administrative and Legal

The type of organization best suited to handle a nation wide water development program and the legislation to empower responsible authorities to take action on it often appear to be deficient. Other difficulties to the speedy promotion of a programme exist in broad areas such as: position and relationship of the Ministry of Health to other Ministries and agencies also having responsibility in the water field: fiscal management and operation methods particularly as related to water rate structures, collection and billing procedures; public information and education methods.

Also of concern under this heading the discussions considered the political difficulties which must be overcome in instances where reorganization, tight financial control, and efficient administration are to be initiated.

##### 2. Technical

Among the recognized technical problems which must be faced may be mentioned those concerned with hydrological surveys; plans and designs best fitted to the countries' needs and resources; construction and operation practices; scarcity of trained engineers, technicians, skilled labor, and facilities for training such personnel. In addition, sanitary supervision by Ministry of Health staff is sometimes inadequate.

### 3. Financial

This problem was discussed at length with particular reference to the question of availability of loan funds, locally and internationally. Included here are problems of locating sources of money at low interest for long periods; questions of how to place water works in a more favorable position for obtaining loan funds; the setting up of equitable water rates reflecting cost; and considerations involved in reviewing requests for loans by investment sources.

While the foregoing resumé of problems to be overcome at first glance appear rather imposing, the conclusion was reached that there is sufficient evidence in this region that solutions can be found to each. The real challenge consists in developing a positive and confident attitude toward the problem on the part of government officials.

#### Summary of suggested action in a community water development program

In considering the problems previously described, the group suggested that the Ministry of Health should take a position of leadership and that the following action could be immediately considered:

##### Administrative action

1. An interministerial committee should be created to coordinate, stimulate and advise the Government on the national water program.
2. A study should be initiated of the best type or types of organization for carrying out the national water program.
3. Such laws should be enacted as are required to implement a program of sound, well managed, and adequately financed national water scheme.
4. Strengthening the Sanitary Engineering service of the Ministries of Health, Ministries of Public Works and at local level (provinces and municipalities).

##### Technical action

Because changes in organization and administrative structure require time, it is important that no country wait for success in these activities before proceeding with the following technical action:

1. Have a reasonably complete study of the water service situation in urban community throughout the country.
2. Have a classification of areas not sufficiently supplied with water according to sizes of communities.
3. Make a selection of the areas which have the greatest need and which may offer the fewest obstacles to immediate success.

4. Prepare a preliminary design and cost estimate for servicing each of the areas selected. This should include exploitation of new water sources, treatment plant, pumping facilities, etc.

5. Prepare for each community in the selected areas a rate structure, encompassing property taxes, consumption charges, special assessments, or other sources, sufficient to pay annually charges for interest on and repayment of loans, for maintenance and operation and for expansion.

6. Arrange for the continuing collection of pertinent experience of other areas to provide for the education of officials, general public, industrialists, economists and financiers, and water consumers.

7. Prepare and distribute authoritative and sound literature on examples of successful self-supporting water services.

8. Stimulate or sponsor training of Sanitary Engineers and allied personnel associated with the program.

#### Finance action

The group agreed on the following principles and procedures related to finance of water systems:

1. Water is not free and the consumer must pay a minimum amount which reflects the cost of operation, maintenance, amortization and interest.

2. Rate structures should be studied and established on a basis which takes into account the ability of the people to pay.

3. Among the external loan sources for financing water supply development the following have been mentioned: Export-Import Bank, Development Loan Fund and the Banco Interamericano de Desarrollo to be set up in the near future.

Application for loans from any source should be submitted only after detailed study and preparation of complete documentation.

4. A revolving fund should be created at national level to provide loans for water supply development to local agencies of government.

#### Public Information and Education

Since water has traditionally been provided by the Government at little or no cost to the consumer in many countries, a well planned and systematic educational program is basic in promoting the self-financed water supply system. Education activities should precede, accompany, and follow the introduction of the system.

Particular attention should be given to the role of the school in educating students and the community concerning the importance of a safe and adequate water supply. The support of civic organizations and professional societies should also be enlisted through educational efforts directed to their special needs and interests.

Anthropologists and other social scientists can be of great help in making preliminary studies of different socio-economic and cultural groups to determine their beliefs and attitudes related to water use. They can also assist in planning educational approaches appropriate to each group.

#### Role of National Ministries of Health and Program Coordination Among Governmental Departments

During the discussions it was stated that mere recognition of the deficiency in water supply in any one country or the expressed knowledge of suitable remedial measures was not sufficient for the promotion of an effective program or for rapid progress in the amelioration of the situation. The initiative of National Ministries of Health in taking direct action was deemed essential for starting and conducting a program which involves to a large extent not only the basic conditions for getting the best results from all major public health efforts but also the promotion of public welfare through economic improvement and indirect benefits now widely recognized as intimately associated with provision of ample and safe water to communities.

The difficulties inherent in such an initiative by Health Ministries were not underestimated and it was pointed out that more than a routine amount of coordination and collaboration with other National Departments, primarily Ministry of Finance, and Ministry of Public Works, among others, was imperative.

The Ministry of Health should also initiate the delicate task of assessing, promoting and bringing about those legal and organizational readjustments that will be necessary in many countries in order to carry out an efficient and rapidly progressing program. This could possibly be better done by an interministerial commission or board.

A third major task with which many national health administrations are confronted is the scarcity of suitably trained personnel. If the objectives of the program are to be at least approached in a reasonable time, an increasing number of specialists are to be formed and suitably trained. Ministries of Health should take full advantage of training possibilities available to them through bilateral and international sources as well as promoting, whenever possible, the training of their personnel within the country.

An essential prerequisite to the success of such training programs to secure an adequate selection is the imperative necessity of making new posts available at sufficiently attractive salary scales.

Further it was agreed that Ministries of Health should retain the right of technical review and approval of sanitary aspects of any community water supply scheme proposed either by a private or governmental agency.

It was also agreed that the Ministry has the responsibility of stimulating and sponsoring educational and informational campaigns aimed at the general acceptance of the basic principle that water delivered in the homes is a commodity that should be paid for by all consumers.

### Role of International Agencies

The primary responsibility of international agencies is in providing the necessary leadership particularly in the education of officials in the administrative, technological and financial aspects. These agencies should also be given the means for rendering technical advisory services to requesting governments in the above-mentioned fields by the provision of long and short-term specialists; by actively assisting governments in the education and training of engineers, administrators, water works superintendents and any other type of specialist required for an harmonious development of the program. This could be carried out using well established procedures already in use for other programs including the setting up of short intensive training courses for national and international personnel; assisting and strengthening existing institutions; conducting studies on special topics; and disseminating information.

An important responsibility of the international agencies will be that of coordinating efforts of the various agencies and institutions involved in the program at all levels of operation: local, national and regional.

Problems are expected from the international point of view in the handling of a program involving large capital investments, construction, operation and management of works with all the legal, fiscal, engineering and administrative components. At the same time it should be noted that agencies have acquired considerable experience in eradication campaigns and now have a fund of knowledge as to the administrative, technological and financial procedures required for large-scale programs. This knowledge and experience, and the spirit of collaboration which exists among international agencies, assure that these problems can be solved.

### Conclusions

In concluding this brief report on which only some of the salient points pertinent to such a complex program have been brought out, it is believed important to underline the fundamental responsibility which lies with the Ministry of Health in the initiation and conduct of such a program. Faith in the ultimate success of its objectives and dedication to a cause which will vastly improve the health and welfare of entire communities are indispensable prerequisites for the realization of a program which will bring permanent benefits to millions of peoples.