

Financial management of water supply and sanitation

A HANDBOOK



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Preface

This handbook is intended to assist all those concerned with financing sustainable water supply and sanitation (WSS) systems. The managerial principles and methods selected to inform and assist practitioners and decision-makers are geared towards financial viability and sustainability, not as ends in themselves, but rather as means to ensure the attainment of long-term public health and environmental goals.

A major question to be answered is: "How can the effectiveness and efficiency of health development efforts be increased in terms of their impact on the health of entire populations, and especially on that of the most needy?" For the WSS sector, the answers are commonly based on cost-containment in design and operation, cross-subsidization, and cost-recovery. The purpose of these measures is to ensure overall sustainability and, in so doing, avoid service disruptions or lack of WSS facilities which, in developing countries, affect primarily the least privileged population groups.

The purpose of this handbook is to improve financial management, in the hope that this will result in WSS service improvements and related benefits. Because of the experience of recent decades, it has become a truism that inadequate financial management in WSS invariably leads to service disruptions and environmental health deterioration. It was not felt necessary to emphasize throughout the handbook the linkage between public health goals, sustainability objectives, resources coverage, and detailed financial mechanisms, such as cost-recovery, cash-raising and cost-containment. The environmental effects of financial decisions and activities in the WSS sector have been documented elsewhere. The purpose of this handbook is to motivate the reader to adopt principles and methods designed to influence these effects.

While primarily designed as a guide for operation and control, the handbook is addressed to a wide range of planners, project officers and other professionals (managers, accountants, engineers, health officials, social scientists, etc.) of national and external agencies, in their policy-making, advisory and training roles.

Part 1, Principles, provides a general conceptual framework based on the objective of full resources-coverage, and is concerned with the What? Why? and Who? of sustainable WSS development.

Part 2, Methods, deals with the practical aspects of the implementation of sound financial principles. Sustainable systems require resources, many of which can be expressed in monetary terms. There is a need for argu-

ments and tools to improve cash-raising and reduce demand on resources and, more generally, to plan and implement economically sound and financially viable WSS systems.

The handbook is based on the recommendations made by a WHO Working Group on Cost Recovery, which has more than 80 members, including senior government officials and representatives of bilateral and international technical and financial institutions, consulting firms, public and private water and sanitation agencies, and nongovernmental organizations active in the field of environmental health.

The material was prepared during a series of consultations organized by WHO, with support from the International Water and Sanitation Centre (IRC). It was subsequently tested and refined in field activities in more than 20 countries. A final set of financial management principles evolved, which were compiled in a document that was used in numerous country and intercountry seminars involving more than 1000 participants. The current version has been further refined in the light of that experience.

Acknowledgements

The WHO Working Group on Cost Recovery in Community Water Supply and Sanitation has about 100 members from more than 30 countries. It was formed in 1987 to provide experience and guidance on selected economic and financial issues in environmental health.

Between 1987 and 1989, the Group formulated the principles and developed the methods presented in this Handbook. They were issued in 1990 as a WHO document for limited distribution and field-tested between 1990 and 1992.

The Secretariat of the Group was provided by the Community Water Supply and Sanitation (CWS) Unit of the Division of Environmental Health of WHO. The International Water and Sanitation Centre (IRC) cooperated with WHO in organizing the consultations of the Working Group and in drafting and field-testing the material. The present version was prepared by L. Laugeri (WHO), technical coordinator of the Working Group.

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PART 1

Principles

1

Introduction

Sustainability is the most desirable characteristic of any water supply and sanitation (WSS) system. Efficiency, effectiveness and self-sufficiency are less reliable indicators, which often deceive planners or discourage promoters, essentially because of their sensitivity to environmental and political change.

For WSS systems to be sustainable, all their costs should be covered. In all countries, cost-containment should be an important objective of public utilities; it is of crucial importance in developing countries, where too many people still do not have access to services. Risk-taking and deficit-spending measures, based on high technology and the assumption that at some future time either consumers or the government will pay, cannot be afforded and should be discouraged.

Subsidies and technical measures to contain WSS costs are generally country-specific and follow various rules; they are not treated here in detail. This handbook deals principally with methods of determining the total cost of water, and of improving cost-recovery through user charges. It does not make any value judgement or recommendation with regard to cost-containment measures, except where they are closely related to the principles and methods of improving cost recovery.

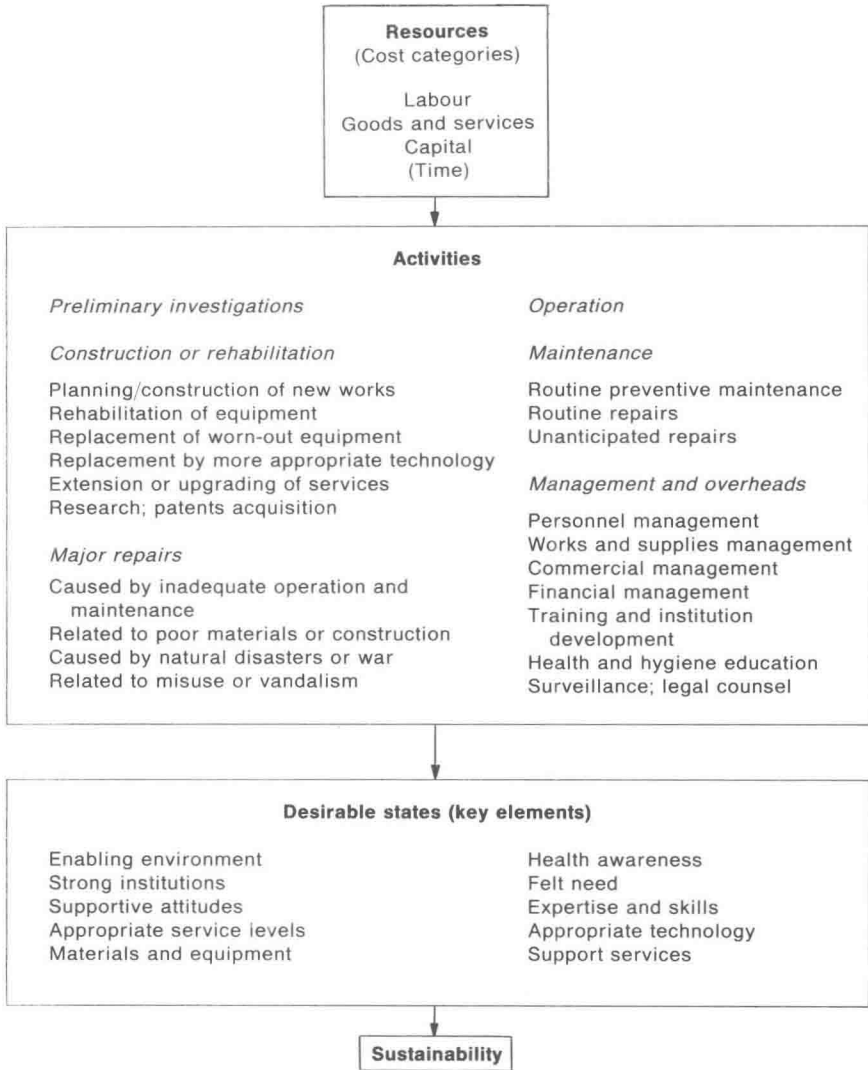
Apart from cost-recovery and cost-containment, the two basic principles of sound financial management are resources-coverage and liquidity-maintenance. Resources-coverage means that at any given time all needs should be covered. Liquidity-maintenance means that at any given time all cash needs should be covered. While full resources-coverage (*inter alia* through cash-raising) should be pursued as a matter of principle, the methods of achieving this will vary with circumstances; in most developing countries, liquidity-maintenance is an essential condition for the attainment of permanent resources-coverage and sustainability.

Part I of this Handbook explains the principles of sound financial management for sustainability, and describes the resources mobilization process which leads to the achievement of a number of objectives (desirable states) required to ensure the sustainability of WSS operations. This process is illustrated in Fig. 1.

Kinds of resources and costs

As in all fields, a set of terms has emerged. "Cost-recovery", "cost-containment" and "liquidity-maintenance" are used by economists and

Fig. 1
Mobilization of resources for sustainability



financial analysts to describe what a public utility should do to ensure the viability of its WSS system. Others involved in development work stress “appropriate technology”, “community participation”, “in-kind contribution” and “partnership” when talking of achieving sustainable community-based WSS schemes.

The two groups are concerned with, and stress, different things, but both have a common goal—a system that functions well, is utilized to the full with continuing health and socioeconomic benefits, and operates efficiently on at least a break-even, if not a surplus basis—in short, a

sustainable system. What is required is that all costs and responsibilities associated with the system's planning and construction, operation and maintenance, and eventual replacement, having been clearly identified and allocated, are adequately met.

In the resources mobilization process shown in Fig. 1, costs are classified according to their nature: labour, goods and services, capital, and time. Fig. 1 also shows various activities, such as construction, maintenance, and rehabilitation.

The total cost of a WSS operation should be calculated as either:

- the sum of the labour, goods and services, and capital resources mobilized as inputs to the WSS system; or
- the sum of the costs of the activities undertaken to plan, design, construct, operate, maintain and eventually extend and renew this system. This latter calculation requires rather sophisticated forms of cost accounting, which necessitate the breakdown of labour, goods and services and capital costs into various activities. It is not generally used in medium-size or small WSS agencies.

Other categorizations and distinctions exist, e.g. fixed versus variable, or direct versus indirect costs. These distinctions are mentioned here and the key elements of sustainability listed to make the handbook self-contained.

The nature of the problem

The difficulty of covering costs is a major obstacle to sound WSS financial management. Satisfying at least minimum WSS needs is an essential step towards the health-improvement objectives of most governments, yet half the population of the developing world is still deprived of adequate services. Ensuring that all costs are covered through user charges alone is sometimes difficult, especially in poor urban and rural areas, where cash plays a minor role in the economy and is in short supply, while social and political considerations complicate the competition for, and allocation of, scarce development resources and operational subsidies.

There is a critical need for managerial and financial improvements to meet budgetary constraints and optimize water utilization. It is necessary to improve the allocation, size and timing of the application of investment funds, to contain all costs, and to diversify and increase the sources of recurrent income. Particularly in developing countries and rural areas, there is an increasing need for communities to organize themselves to construct, operate and maintain WSS facilities, and to derive the maximum benefit from these facilities while ensuring that all costs are met.

It is widely believed that water is free. In fact, it has a price that should always be paid by those who consume it. In practice, although sound tariff structures are beginning to be widely used, WSS services in many countries are provided at prices unrelated to either financial or

economic costs, while large consumers (including governments) sometimes do not pay their water bills, and industries often enjoy the benefits of private supplies and discharge untreated effluents free of charge or penalty. At the same time, charges for those who do pay are high.

It is not uncommon to find that utilities have irregular incomes and difficulty in meeting fixed obligations such as debt service and payrolls. Charging prices that are too low is one reason for this state of affairs, but a number of "larger environment" problems, such as unwillingness to pay, perceptions that rates are too high in relation to quality of service, lack of qualified staff and of political will also influence the commitment to contain and recover costs.

Another obstacle to efficient resources mobilization is that it is too often restricted to the WSS sector alone. The linkage with other sectors, especially public health, should be emphasized. The role of the health sector as a provider of resources for health education and WSS surveillance should be considered, in addition to the promotion and organization of community involvement. In many countries, health agencies can also assist in the planning, construction, operation, maintenance and repair of simple systems. In some instances, industry and rural development also have a role to play in helping the agencies of the WSS sector, and possibly in subsidizing other consumer groups.

One last obstacle to efficient financial management is the high cost of providing WSS services to very small communities in remote areas or those where the provision of safe water is difficult. In some countries, such communities account for more than half the total population. A rigid policy that a fixed proportion of the total cost must be met by the community can be unfair or unrealistic, so that no universal rule applies. Studies are required on a case-by-case basis, stressing appropriate technology, community participation, intersectoral action and cross-subsidization, while bearing in mind, however, that in the end all sector costs must be covered.

Perception of the problem

Engineers, financial analysts and economists have different perceptions of the problem, and the objectives they pursue, as well as the language they use, differ widely; they nevertheless have the same overall concept of sustainability. As this handbook frequently indicates how objectives should be set and costs and benefits calculated, it is important to define precisely the perceptions that professionals of various disciplines have of their respective objectives with regard to cost recovery.

In a restrictive sense, the engineer is concerned with a project to provide WSS services, and thus with the cost of the material, labour, and capital resources, such as pipes, reservoirs and pumps, needed for the purpose. The engineer's objective is that the cost of the project should be the lowest possible compatible with satisfying the demand for water (or achieving any other type of benefit).