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Community Management

of Rural Water Supply and Sanitation Services

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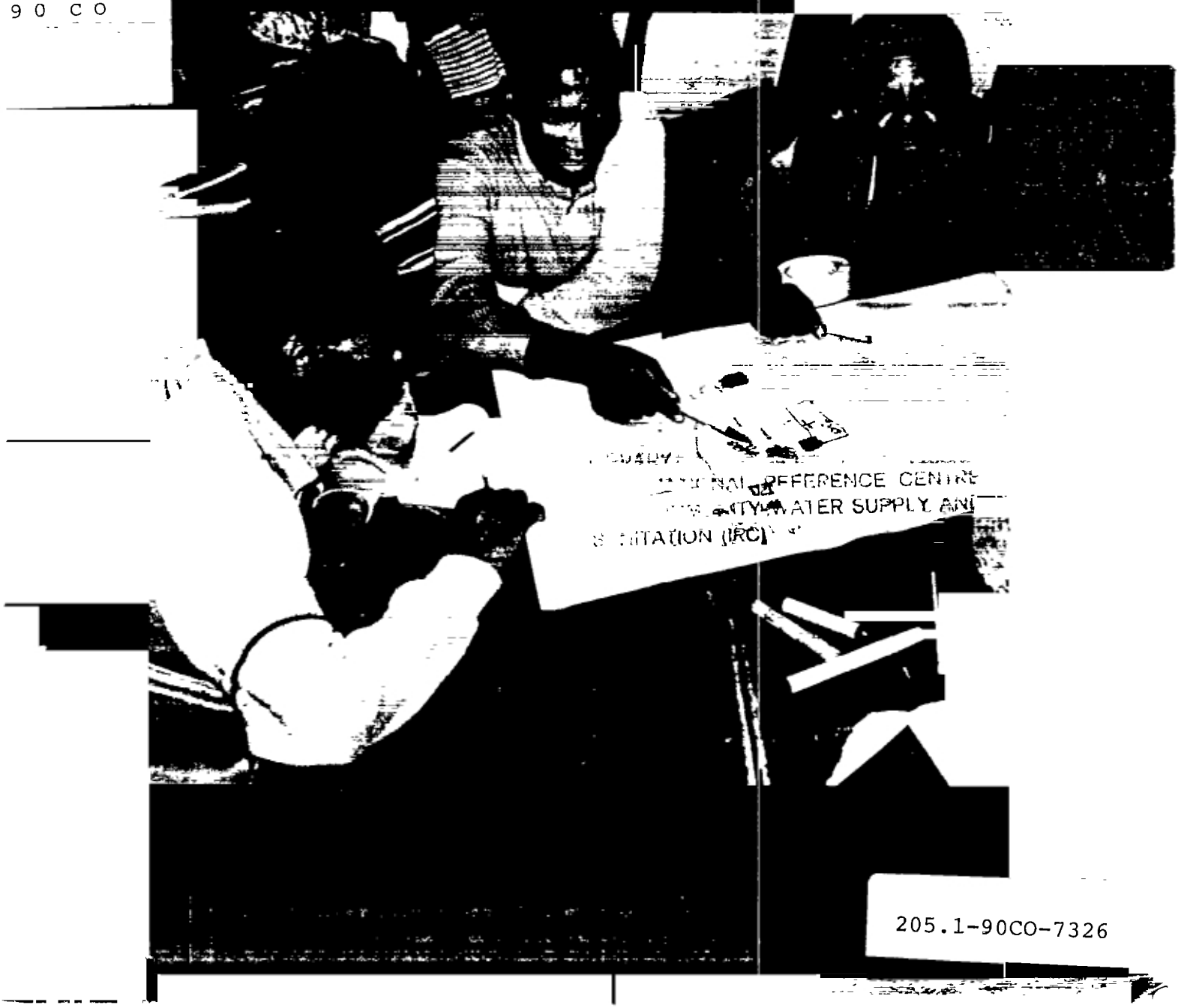

COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY AND SANITATION SERVICES

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COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY AND SANITATION SERVICES

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Cover photo: Rick Pollard

This paper derives from a workshop on community management organized by the UNDP-World Bank Water and Sanitation Program and the USAID-WASH Project at the offices of the World Bank on December 19-20, 1988. The twelve participants from the two groups identified and prioritized key questions concerning community management and sustainability of RWSS projects and recommended that this concept paper be prepared.

ABSTRACT

This discussion paper derives from a symposium held at the World Bank in 1988. The paper develops a definition of community management and describes the "enabling environment" necessary for meaningful community management of water resources and waste disposal.

The paper analyzes the roles of, and identifies salient issues between, communities and external agencies. It describes growth toward full community management as a five-level process and outlines the types and degrees of external support and interaction appropriate to each level.

The paper also examines seven projects to identify important features of community management, underscoring the importance of enhancing the capacity of local communities to assume a leading role in the planning, construction, financing, and management of new water supplies. By doing this, communities can best obtain the system they want and will support.

Finally, the paper reviews community management functions, resources, benefits, and constraints and proposes priorities for further research.

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FOREWORD

Poor water supply and sanitation services continue to be critical problems in rural areas despite considerable effort to improve and expand access. Mounting evidence indicates that centrally managed schemes, among others, are difficult to implement and operate when the communities served are dispersed, remote, and relatively small and lack the financial resources and physical and social infrastructure needed to support development or to maintain new systems. In contrast, locally managed systems appear to function reasonably well and to be sustainable. Although such schemes are obviously difficult to standardize for all communities, water and sanitation experts agree that they have numerous advantages over other approaches and that the question is no longer whether community management should be promoted, but how. As this report points out, an effort should now be made to identify programs that work and determine which types can be adapted to specific sites. The time is ripe to explore the practical details of applying community management.

Field experience suggests that community management of rural water supply and sanitation services (RWSS) entails far more than a mere redefinition of responsibilities: it must be anchored in local socioeconomic, administrative, and political realities. Community needs and strategies for meeting them must be defined in concert with community participants and local leaders, who are already experienced in managing existing resources. In a sense, this is a difficult task. Many of the decisions to be made are likely to pit traditional systems against modern techniques and advanced technologies, and the decision makers will come under the sway of complex political interests. Nonetheless, it is widely believed that community-managed schemes can succeed where top-down methods have failed--not merely because of greater community participation, but because of greater community control over decision making. This is what makes community management a dynamic system. Communities obtain the RWSS system they want and will support.

At the same time, community management should not be thought of as a simple choice between a top-down or bottom-up approach. Rather, it is the outcome of a collaborative partnership between the community and the government in which neither is dominant and each understands and accepts its role. This type of relationship places new demands on both parties: communities must become the focal point of decision making, and governments must help create or support conditions in which community-based actions can occur. External support agencies can also play a large role in bringing about such partnerships.

Much remains to be done to pave the way for sound community management. This report represents one step in that direction: it defines the concept of community management, explains the relationship between the concept and sustainable systems, and identifies priorities for future research. The underlying assumption is that community-managed services foster a sense of ownership and willingness to pay, which in turn contribute to better overall performance. The idea of self-sustaining development may well open the door to long-term rural development in the poorer countries of the world.

I. INTRODUCTION

Serious problems stand in the way of efforts to expand and sustain water supply and sanitation systems in the rural areas of the world. The size of the task in itself constitutes an enormous obstacle: 58 percent of rural residents have no access to improved water supplies and 84 percent have inadequate sanitation (WHO 1987). Rising costs pose another problem. Between 1980 and 1985, the unit costs of improving rural water supply and rural sanitation rose 24 percent and 39 percent, respectively (WHO 1987). Meanwhile, funding has been declining, and many completed systems are in disrepair or have been abandoned. This state of affairs has led many experts to question whether the emphasis on centrally managed schemes needs to be re-evaluated and a new approach taken to the provision of rural water supply and sanitation (RWSS) as a public service. ***Community management*** has been proposed as one possible alternative strategy in view of the increasing evidence that systems are more sustainable when designed, established, and operated by the community.

One of the great difficulties in trying to provide rural settlements with public services is that they are usually small, dispersed agricultural communities with populations of 5,000 or fewer and without the necessary economic, technical, or institutional base to improve water supply and sanitation. Therefore, centrally managed schemes do not work as well here as they do in urban areas, where a single institution, either a public-sector utility or a private water company, is more cost-effective and can benefit from economies of scale. In rural areas, capital costs are seldom recovered. Much the same is true of user payments, which are needed to cover the costs of operating and maintaining completed systems. Neither the community nor the government can afford to pay for these services, with the result that they are often unreliable or nonexistent (Grey 1988).

Some systems are not even used. Published figures on coverage often overestimate the number of residents who have reasonable access or the desire to use improved water services (Briscoe and de Ferranti 1988). In Africa and India, for example, only one-third and one-half of the respective populations nominally served by new systems actually use them. Cases have also been reported in which as many as 80 percent of the handpumps in a country are not working at any one time, and villagers have refused to use a new system or pay for the fuel it needs because they prefer the taste of the water from a more accessible traditional source (Churchill 1987).

Consequently, a great deal of attention has recently been given to the question of how to sustain rural services (i.e., how to ensure that systems will continue to function and produce intended benefits after project completion) and how to improve delivery. The limited success achieved in rural areas is widely attributed to a lack of insight into the appropriate roles of public institutions in the management of RWSS systems. When RWSS systems are managed by external agencies, service delivery is organized around the assumption that rural people have basic needs for water that must be met, rather than around the actual demand and willingness to pay for these services. Furthermore, in its role as a provider, the government has fostered unrealistic local expectations through heavily subsidized services, which merely distort the market and impede local and private-sector initiatives. In addition, central

planners fail to consider the degree of technological change that a community can manage, or the advantages of introducing incremental changes in existing technologies and service levels.

But the situation did not improve markedly even when some community-based participation was encouraged, largely because community participation has been narrowly defined as the mobilization of self-help labor or the organization of local groups to ratify decisions made by outside project planners. Externally imposed solutions do little to build capacity, increase empowerment, or create support structures that represent the interests of users willing to maintain these RWSS systems on a long-term basis.

Another problem lies in the development approach to RWSS. Owing to the high cost of bringing centrally managed services to rural areas, planners have tended to concentrate on individual projects funded by various donors rather than on broad programs. But the project approach has a finite time frame and therefore often neglects to provide for sustainability and cost recovery. Few projects have the open-ended capacity--and necessary resources--to support operations and maintenance or expansion and replication after a system has been constructed. Projects do little to strengthen institutional capacities, either within the public sector or at the community level.

The project approach also pays little attention to coordinating sectors, even when national policy emphasizes the program approach. Because most developing countries obtain financial and technical assistance for individual projects from a variety of external support agencies within the donor community, they have difficulty enough following a national approach among donors, let alone among sectors. Project results therefore tend to overlap at times and to diverge at others, while resources remain too inadequate to create and strengthen the public, private, and NGO services needed to support community-managed systems.

In view of the growing interest in community participation and the anecdotal evidence that rural communities with sustainable water and sanitation systems also tend to have strong local control over system management and operation, water and sanitation experts have concluded that it is time to explore the practicality of community-managed RWSS. Although the participatory approach is widely thought to be desirable in rural areas, it must not be oversimplified and divorced from political and administrative reality (Feachem 1980). Thus, the point of this report is not to redefine or redirect theories of community participation, but to determine the processes necessary to build community management capabilities in rural water supply and sanitation services.

Community *management*, as distinguished from community *participation*, is taken to mean that the beneficiaries of rural water supply and sanitation services have responsibility, authority, and control over the development of such services. Although there are important differences in managing water supply services and sanitation systems, the two are treated together in this discussion in an effort to identify common issues. Note, however, that rural water supply is often assumed to be a community service, whereas rural sanitation is usually considered an individual or household facility. The technological complexity of the services and the subsequent maintenance requirements will also have an effect on the need for community management of these resources. Equally important are the underlying issues of supply, demand, and perceived needs, as well as the delivery mechanism whereby these facilities--whether private, shared, or communal--are financed and constructed.

This inquiry is based on the hypothesis that *strong community management leads to sustainable water supply and sanitation systems*. It represents a first step toward addressing potential issues in community-managed RWSS. The overall objectives of the study are to define the concept of community management, discuss the potential role of community management in developing sustainable RWSS systems, and identify priorities for research.

II. THE ROLE OF THE COMMUNITY IN RURAL WATER SUPPLY AND SANITATION DEVELOPMENT

Although the concept of community management has gained many adherents in recent years, some confusion remains about its meaning. Part of the problem is that community can be defined in many ways: it may refer to a group of people living in a geographically defined area, or to a group that interacts because of a common social, economic, or political interest. Also, the term community management is sometimes used interchangeably with community participation to refer to community involvement in development projects. Its meaning is actually more restricted: it refers to local responsibility for operations and maintenance of service or to specialized management through contracted services. However, complications arise here, too, because user, household, or local management can be implied, depending on the context. These various problems are taken into account in the following inquiry into the concept of community management with a view to clarifying the salient issues connected with its application.

Community Capacity for Development

Development is a process of change in the economic, social, and technological capacities of a community. These capacities are measured in terms of the community's developmental status and the potential for further change. The potential for development depends as much on local traditions, organization, and accumulated development experience as it does on the social, economic, and political environment. Consequently, development is both a social (or human resource) phenomenon and an expression of economic power. The potential for developmental change is often greater in communities that have a history of change. It stands to reason that their capacity to recognize, accept, and support developmental changes will be greater because they are more familiar with the process of change.

In assessing the capacity of communities to manage development, it is important to distinguish between the way they manage their daily affairs and the way they handle developmental change. All social groups devise mechanisms for handling routine affairs and managing their resources--in some cases these mechanisms have evolved over thousands of years. Perhaps the most important of these resources, because health and economic survival depend on it, is water. Rural communities have always managed their traditional sources of water. When a community is provided with new water resources, it may have to change its existing management practices and even lose control of water rights. It may also be forced to enter new types of external relationships. How a community reacts to such changes can be influenced by external institutions, through regulatory control, technical assistance, and a variety of incentives. There is no specific set of actions that an external institution can take in all instances to ensure a smooth change, since each community's response depends on its needs, which vary from one region to another. Institutions charged with fostering economic and social change have a responsibility to determine the potential for development in a given community, and then to work within that limit or attempt to increase the potential.

Too often, however, the call for community involvement has been answered by imposing management methods designed outside the community, which do little to build local

capacity. Before any significant advances can be made in the direction of community management, planners must reach some agreement on what community management means and how community capacity for development can be enhanced through extension services. They must also keep in mind the distinction between community management and participation because there are significant differences in their underlying purposes. At the same time, experience gained from the exercise of community participation can suggest appropriate ways of approaching community management.

Characteristics of Community Participation

Community participation has become a favored development strategy because it involves people in decisions and actions affecting their welfare. The concept originated about 40 years ago in the community development movement of the late colonial era in parts of Africa and Asia. To the colonial administrations, community development was a means of improving local welfare, training people in local administration, and extending government control through local self-help activities.

Community development fell out of favor in the late 1960s and early 1970s, primarily because of the widespread disenchantment with the top-down bureaucratic approach to development and its failure to redistribute benefits. During this era, community development came to be associated with coerced labor, although it was often called voluntary.

With the demise of the original community development movement, the governments of developing countries and external support agencies began to place new emphasis on participatory efforts in their statements, if not in their programs. To some extent, this new emphasis was the result of greater democratization in community development programs within the donor countries themselves. It was also fostered by private, religious, and nongovernmental organizations active in rural areas, which saw a need to integrate rural development, provide basic services, and alleviate poverty. Depending on one's viewpoints and objectives, community participation came to imply any number of concepts, from self-help, animation, and user choice to local participation and participatory democracy. By the mid-1980s, most development organizations formally supported the idea of community participation, although few included the concept in their programs, and fewer still could claim any success in applying it.[1]

At present, the concept of community participation is taken to mean that the community plays an active role in its own affairs by sharing and exercising political and economic power. World Bank experience with community participation has given rise to the following definition: "an active process whereby beneficiaries influence the direction and execution of development projects rather than merely receive a share of project benefits" (Paul 1986). This definition places participation in the context of a development project or program, emphasizes participation by beneficiaries rather than external personnel, stresses the

1. A more detailed discussion of the origins of community development can be found in White (1989).

involvement of beneficiaries in groups, and refers to a process rather than a product. Recent reports of the World Bank, the United States Agency for International Development (USAID) and the Water and Sanitation for Health Project (WASH) point out that the concept of community participation may have considerable potential for improving development planning and sustainability.

The objectives of community participation in the context of development programs may include (a) sharing project costs (beneficiaries contribute money or labor), (b) increasing project efficiency (beneficiaries assist in project planning and implementation), (c) increasing project effectiveness (beneficiaries have a say in project design and implementation), (d) building beneficiary capacity (beneficiaries share in management tasks or operational responsibilities), and (e) increasing community empowerment (beneficiaries share power and increase their political awareness and influence over developmental outcomes).

Viewed as an active process, participation may consist of technically feasible combinations of various objectives, levels of intensity, and instruments. The intensity of participation may range from information sharing (the lowest level) to consultation, decision making, and initiating action (the highest level). The institutional instruments used to organize and sustain community participation may also vary in complexity, from field workers of the project agency to community workers, committees, and user groups. In general, a more complex participation objective will require a higher level of participation intensity and more powerful instruments.

Two other kinds of local participation have recently been identified: local organizational development and indigenous local participation (Bamberger 1986). Local organizational development is an externally promoted participatory approach that provides assistance to strengthen or create local organizations without reference to a particular project. Indigenous local participation refers to spontaneous activities of local organizations that evolved independently and without outside assistance.

The preceding definitions make no reference to water supply and sanitation. However, it has been suggested that the degree of external versus internal support in an RWSS project significantly affects its sustainability (Yacoob and Warner 1988). The emphasis in externally initiated and supported RWSS projects is usually on technology and system coverage. Project staff organize the community water committees, negotiate agreements with local leaders, and provide essential, but limited, technical training and health education instruction. A primary concern in externally supported projects is to meet construction schedules.

In contrast, community-supported RWSS projects emphasize capacity building and organization. They are designed to improve the problem-solving capacity of the community as measured by behavioral change. With this approach, project preparation takes considerably longer, as it involves community orientation and the training of key persons. High priority is given to developing human resources, with the result that the beneficiaries are given a sense of responsibility and commitment toward the project. In reality, development projects require both external and internal support, so that in essence community participation is a question of the relative emphasis given to each source of support and the steps taken to integrate them in a complementary fashion. Although the community-based approach is expensive at the outset,

its effectiveness appears to increase and its costs to decline over the long term since local commitment helps to keep maintenance costs down.

WASH experience indicates that the following community participation activities are associated with most successful rural water and sanitation projects (Yacoob and Warner 1988):

- **Community mobilization and organization:** Community participation means involving as many community members as possible by providing an institutional vehicle through which they can act.

- **Project negotiations:** Communities need to communicate their preferences and have a say in the type of projects to be considered. Their input may be given in consultations between community leaders and agency officials or in public discussions within committee meetings. It may consist of formal bargaining on issues such as project design, community contributions, and external assistance.

- **Committee operation:** Community organizations are usually elected or appointed committees. Their potential operating effectiveness depends on the degree to which they are allowed to function in project development.

- **Training:** Training is necessary for system managers, committee members, and all others involved in project implementation. Although some training may be required from external sources, community members themselves should be trained to pass on their skills to others.

- **Hygiene and user education:** Hygiene and user education help to instill responsibility for the system and a feeling of control over the environment in the minds of the participants. Training should be participatory and practical, rather than didactic and theoretical, and it should encourage behavioral changes in order to maximize health benefits.

- **Community contributions:** Communities must contribute to the development and operation of their projects if they are to feel that they own the resulting system. Contributions include monetary investments, materials, equipment, and labor, as well as committee membership and general participation in project-related meetings.

- **Cost recovery:** The community should interpret cost recovery as an obligation to meet its share of the costs of the project. In particular, the community must meet any obligations to external agencies.

- **Operations and maintenance:** To the extent possible, communities should accept and exercise responsibility for operations and main-

tenance. Caretakers and repair crews should be well trained and responsible to a community-based institution.

Since 1980, the function of external agencies has expanded greatly. Today, they not only provide technical and financial resources *for* communities, but they also promote self-sustaining community participation *within* communities. Project field staff play an important role in this relationship, as they form a link between the project and the community. Their promotional activities can be divided into three types: organizing, training, and facilitating (Isely and Yohalem 1988). They work with the community to accomplish the development tasks that the communities themselves have chosen to undertake.

As mentioned earlier, the participatory, activist approach to development evolved from the top-down approaches of the early community-development era. This change has been described as a paradigm shift because the international donor community's acceptance of the concept of project sustainability represents a shift in the analytical basis for community participation from initiation to responsibility (Donnelly-Roark 1987). The initiation approach is concerned with mobilizing community support for the project, which means the project support agency delegates participation-type activities to field staff as a discrete component. In contrast, the responsibility approach is concerned with helping local people and communities assess information and make decisions in order to take responsibility and control. This new emphasis linking responsibility to sustainability suggests that participation should be redefined as "the learning process by which communities control and deal with technology, change, and development. It is a necessary component of every water supply project that has maintenance and long-term sustainability as its objective" (Donnelly-Roark 1987).

What has been described as the "local management participatory process" is said to be the means of achieving community management. The main steps in the process are to identify local management systems, recognize and negotiate local responsibility and control, and establish two-way information systems between the community and the project. However, the shift from an initiation and mobilization approach to one of responsibility and participation cannot be expected to take place quickly or efficiently in the short term. Furthermore, before it can occur, decision makers must rethink the aims and objectives of projects and how this attitude fits in with the project cycle. The goal of sustainability is said to validate the resources needed to implement this participatory approach, as it can help communities "initiate, implement, and maintain their own programs, projects, and endeavors."

Concept of Community Management

Until recently, community management as applied to rural water supply and sanitation systems has generally been concerned with questions of maintenance, the participation of women, and in-kind contributions, all of which involve community participation and therefore were said to promote sustainability. Yet field experience has shown that sustainability depends on more than community participation alone, although community participation does appear to provide the environment required for successful community management, which has come to be known as the ***enabling environment***. Therefore, general community participation in significant decision making may be seen as one precondition for community management. Furthermore, if community participation occurs at different levels of intensity,

then the potential for community management will depend on the level of community participation that has been achieved.

As noted earlier, the concept of community participation implies that the beneficiaries are involved in developmental activities, whereas community management refers to the capabilities and willingness of beneficiaries to take charge and determine the nature of the development affecting them. In water supply and sanitation systems, community management means that the community exercises responsibility for decision making and control over the subsequent execution of these decisions during project development.

The distinctive feature of community management is the nature of decision making and the locus of responsibility for executing those decisions. Community management refers to the capability of a community to control, or at least strongly influence, the development of its water and sanitation system. Community management consists of three basic components:

- **Responsibility.** The community takes on the ownership of and attendant obligations to the system.
- **Authority.** The community has the legitimate right to make decisions regarding the system on behalf of the users.
- **Control.** The community is able to carry out and determine the outcome of its decisions.

Community management, as defined above, is concerned with all issues pertaining to responsibility (ownership), decision-making authority, and control over project development and systems operations. Community activities in this regard all help to ensure that RWSS improvements will be sustained. Community participation, in contrast, stresses community involvement and contributions. Admittedly, effective community participation does include some decision making by beneficiaries, but they do not necessarily have the authority to initiate discussion in this area or to enforce decisions. Community management may imply a variety of management systems, from extensive contributions of self-help labor at lower levels of service to specialized managers at higher levels of service. Participation and management can also be distinguished on the basis of fee-collecting activities. Participation implies that the community performs routine operational duties such as record keeping, accounting, and payment collecting under a system predefined by an external agency, whereas management implies that in addition the community establishes tariff schedules and institutionalizes its own form of fee collection. The distinction hinges on whether the community is willing and able to make decisions affecting the system.

Some distinctions also need to be made in the type of management required in rural water supply and sanitation systems. A great deal will depend on the nature of service being provided and the extent to which community management is pertinent. For example, piped rural water supply is usually a public facility made available to individual consumers, and they can either utilize it or not without significantly affecting other users. All users, however, are called upon to help meet recurrent costs and ensure that the systems are operated and maintained. Fees are collected for this purpose.

In this situation, users need to provide a degree of management (or pay someone) to ensure that the benefits as well as the burden of maintenance are shared equitably. In contrast, rural sanitation and water sources such as catchment systems or hand-dug wells are point services that are entirely the responsibility of the user, who must maintain the services if benefits are to be sustained. Rural sanitation in particular is usually a private household facility that requires little or no structural maintenance but does need daily cleansing if it is to operate properly. Similarly, household water cisterns must be maintained to prevent insect or dirt contamination, and water must be properly stored if the user is to realize the full benefits. In these situations, the community may manage campaigns designed by external support agencies to promote hygiene education or to encourage proper use, maintenance, and possibly the improvement of existing facilities. It may also help families obtain these systems if they lack them. Despite the rather complex nature of community management, it is possible to identify the preconditions that create the enabling environment in which community management can occur. Although little has been written about this particular subject, some useful ideas can be gained from information on the preconditions of successful RWSS planning, which are said to include attention to (1) the water and sanitation needs of the community, (2) the social and economic conditions of the people, (3) the technological choices suitable for the community, (4) the supporting conditions (which consist of the available resources, complementary investments, and project-induced changes), and (5) the expected outcomes and benefits of the project (Warner 1981).

On the basis of this information, it seems reasonable to assume that the important preconditions for community management are likely to include the following:

- There must be community demand for an improved system.
- The information required to make informed decisions must be available to the community.
- Technologies and levels of service must be commensurate with the community's needs and capacity to finance, manage, and maintain them.
- The community must understand its options and be willing to take responsibility for the system.
- The community must be willing to invest in capital and recurrent costs.
- The community must be empowered to make decisions to control the system.
- The community should have the institutional capacity to manage the development and operation of the system.
- The community should have the human resources to run these institutions.
- There should be a policy framework to permit and support community management.

- Effective external support services must be available from governments, donors, and the private sector (training, technical advice, credit, construction, contractors, etc.).

Most of these preconditions will be present if an activist approach is taken to community participation. In other words, such an approach lays the groundwork for community management. Although the last two preconditions in the preceding list refer to attributes of external supporting agencies, they, too, depend on an activist approach.

Unless the relationship between community participation and community management is recognized, it will be difficult to understand how a community can develop the willingness and capacity to manage its own RWSS systems. This linkage can be seen as a building process in which participation leads to management through progressive levels of local responsibility, authority, and control as management passes from the external agency to the community. Table 1 depicts the levels in this building process. For purposes of simplicity, it does not include all the factors that may influence the development of management capacity, such as prior development experience, the effectiveness of indigenous institutions, sociocultural variables, and the broader socioeconomic and political environment. Instead it focuses on the three main functions of management that are transferred from external agencies to communities as they develop the capacity to take charge of their RWSS systems. Indigenous community management of traditional systems is also omitted from the discussion because it differs from the management of improved systems initiated or supported by external agencies. The levels of community management of primary concern here are Levels II to IV, which are relevant to rural communities in developing countries and the types of water and sanitation systems that are currently being developed there. The purpose in developing local capacity for community management should be to help communities acquire the skills needed to increase their management capacity from Level II to Level III, and from there to Levels IV and V.

Level I is the baseline for community management. At this stage, the community plays only a marginal role in system development and operation. This level of activity was typical of earlier approaches to the provision of improved supplies, many of which were only providing solutions to technical problems. The external agency is almost entirely in charge and is therefore responsible for the development, operation, and maintenance of the system. The community may accept responsibility for a few self-help tasks and token donations to an operation and maintenance (O & M) fund in exchange for obtaining the system. This level of participation is seldom sufficient for the community to develop a sense of ownership and responsibility or to develop the ability to oversee the operation of the completed system. Although the community or its leaders may be consulted before decisions are made, the only authority they have is the right to say no. All too often, this authority to say no is not exercised, but when the system is built, the people refuse to use or maintain it.

Level II refers to a situation in which a community has somewhat greater, but still very limited, capacity for management. Most water supply and sanitation projects that have some social or promotional components probably fall in this category. The external agency retains responsibility, authority, and control over most aspects of system development, while the community acts in a subordinate, supportive manner. The external agency promotes community participation with a view to increasing project efficiency and effectiveness and reducing

TABLE 1

Levels of Community Management

Level	Responsibility	Authority	Control	Management capacity
I	External agency; little community responsibility	External agency; informal community consultations	External agency; limited community participation	Insufficient
II	External agency; community responsible for operation	External agency; limited formal role for community institutions	External agency; moderate community participation	Limited
III	Joint; community community responsible for operation and maintenance and maintenance	Joint; collaborative role for community and agency	Joint; strong community participation and limited community management	Moderate
IV	Community; external support	Community; external suppport	Community; external support	Sufficient
V	Full community responsibility	Full community authority	Full community control	High

project costs. The intensity of community participation is sufficient to grant the community (1) enough authority to play a limited role in project decision making, and (2) enough control over project development to become capable of operating the completed system. The intensity is not sufficient, however, for intensive organizational development and community training. As a result, despite some degree of participation, communities at this level are seldom prepared to take full responsibility for system maintenance, and therefore the systems must remain the ongoing responsibility of the external agencies or fall into disrepair.

At Level III, a collaborative relationship develops between the community and the agency. Most projects cited as good examples of community participation are probably at this level of management capacity. Although implementing agencies, projects, and nongovernmental organizations (NGOs) seldom relinquish their command over project development at this level, they delegate sufficient authority and turn over enough control to enable and encourage the communities to take on joint responsibility for the development and O & M of their completed systems. Community participation is promoted intensively at this level with a view to

achieving capacity-building and empowerment objectives. At this stage, community committees are organized and committee members are trained to take on management responsibilities. Authority for sharing in decisions concerning project preparation and implementation is delegated to community organizations that are expected to make system operation decisions. Organizations are also named that will be sharing control over project execution. Promotional activities are critical in developing these skills.

Level IV represents reasonably effective community control of all the main elements of the system. The community, not the external agency, is in charge of its system. The agency merely provides technical and financial assistance to support community management. The transition from Level III to Level IV cannot take place unless enough of the preconditions for community management have been met to enable the external agency to turn over management responsibility to the community. It is not necessary for all of the preconditions to be met, nor do they have to be met in the same degree. There may be a lag, for instance, between the community's demand for improved services and its ability to cover all or even most of the capital costs of the system, or between its authority to make decisions and the human resources it needs to make them well. The capacity for community management develops through a dynamic process in which change and growth occur at every level as well as between levels. The external agency must still play a supporting role at Level IV to ensure that development will continue to take place.

Level V is where the community becomes fully responsible, has full authority, and is in full control of all system activities. The external agency now acts as an enabler to ensure that the necessary technical and financial resources needed to support community-managed systems are in place. This institutionalization of resources may include a carefully developed regulatory framework, discretionary loans or grants, or access to competently trained extension services.

Management capability can be assessed in part by the level of community contributions to system development and operations. The willingness of a community to help finance its water and sanitation system is a measure of management potential. Because decisions are being made, this action differs from contributions made in the context of community participation. In community-managed systems, users identify and mobilize resources. A community that is unwilling to use its available resources, however limited, for this purpose or that is unwilling to obtain them from elsewhere, can hardly be in control of its system. Not only must the environment make contributions possible, but the system users must also be willing to exchange some of their resources for the service desired.

The correlation between a community's willingness to pay and its management role is based on the assumption that those who play an activist role will select, support, and sustain systems most appropriate to their needs. This implies logical choices and an awareness of the costs and benefits of alternative options. At lower socioeconomic levels, where local resources and support structures are limited, such options are particularly important. At all levels, the willingness to pay instills a sense of ownership that engenders more effective cost-recovery schemes. In sharing capital and recurrent costs, the community takes responsibility for setting tariffs, organizing fee collection, and establishing effective O & M.

Community contributions can be divided into two basic types: cash payments and in-kind donations of time, labor, skills, land, and local materials. Cash payments may be used to

cover capital costs, operational expenses, large maintenance costs, system expansion, and, where appropriate, loan amortization. More and more communities are being required to contribute to the capital development costs of their systems incurred by an external agency. In some cases, these contributions are made through one-time fee collections at the start of a project, but a widely growing practice is to cover the community share of capital and recurrent costs through water fees and other charges. Table 2 illustrates how the relative degree of support from the community and the agency can be used as a measure of community management. Project support can consist of local (in-kind) contributions from the community, cash payments (cost recovery) from the community, and support from the external agency (which may include technical assistance and/or loans).

TABLE 2

Levels of Project Support

Level	Contributions in kind (from community)	Cash payments (from community)	External support (from agency)
I	None to limited	None to limited	Full external support
II	Some self-help labor; local materials; weak	Some O & M	All capital and most O & M costs
III	Self-help labor; local materials; active committee support	All O & M and minimal capital costs	Most capital costs
IV	Most noncash needs; strong committee support and management	All O & M and some capital costs	Some capital costs
V	All noncash needs	All O & M and most capital costs	Access to loans and grants

Communities may choose to make all of their required contributions in the form of cash payments rather than a mix of cash, local materials, and voluntary labor, as in the classic community participation model. High-income communities, in particular, may substitute cash in lieu of in-kind contributions to hire labor or purchase materials that might otherwise be donated. As management capacity increases and more users opt to pay for system support rather than volunteer their own time and effort, management roles become more specialized. Therefore, in-kind contributions are not an essential characteristic of community management,

although they may be crucial for effective community participation in rural areas. The decision to make contributions, whether in kind or cash, marks the activity as a management function. Just because a community has a high management capacity, however, does not always mean it will be able to recover costs quickly. Cost recovery is a process made up of progressive targets that vary with each community's ability to meet them. Some communities may have inadequate financial resources to support a project but still may have the management capacity. Cost recovery may also have little to do with management capacity in communities that receive grants-in-aid or donations of services or materials. This is often the case in poor communities in developed countries or in projects involving collaboration with the private sector.

III. EXAMPLES OF COMMUNITY MANAGEMENT FROM FIELD EXPERIENCE

Community management must also be seen as the culmination of a long-term effort by the community, the government and, often, the private sector striving to help the community become self-reliant and gain control over development. Experience can provide useful lessons on how management can be achieved. The following examples come from rural water supply and sanitation projects implemented (in most cases) within a participatory framework. They illustrate various parts of the community management process, rather than a complete set of management characteristics, which are difficult to find in any single project since development projects are implemented within a larger national framework that imposes constraints on the degree of change that can be generated at the local level.

No additional field work was carried out to obtain information on community management, and this discussion is not concerned with testing a rigorous hypothesis but with identifying salient issues related to responsibility, authority, and control. Each field example was examined with the following questions in mind:

- **Implementing Agency:** Did a government agency have primary responsibility for overall project implementation?
- **Community Organizations:** What community organizations were involved in implementation and to what extent?
- **Promotion:** To what extent did the main implementing agency actively promote the project within communities?
- **Cost Recovery:** What portion of capital and recurrent project costs were borne by the users of the water and sanitation systems?

Four of the examples are from sub-Saharan Africa (Kenya, Sierra Leone, Togo, and Malawi), one from Asia (Philippines), one from Central America (Guatemala), and one from the United States. Examples were chosen from a variety of locations to demonstrate how environmental conditions affect the community's ability to build technical, financial, and managerial skills.

Sierra Leone: From Pumps to People

The Moyamba Clean Water Project implemented by the Ministry of Energy and Power in Sierra Leone is an example of a donor-funded project that shifted its emphasis from constructing facilities to establishing a participatory process. The project, as originally designed, included the construction of more than 120 dug wells plus environmental health education and the construction of ventilated improved pit (VIP) latrines in participating communities. Work in the field was monitored by extension agents of the ministry in collaboration with the formal community leaders appointed by the government and political party.

After working on implementation for six years, the staff of the NGO contractor assisting with project execution realized that the project was not sustainable despite its simple technology. Although construction targets were being met, most wells were usually out of commission, many latrines were not being completed, and the environmental health education component was being neglected. Extension agents had to judge their success by the number of facilities constructed and the number of communities accepting the project. The results were disappointing, in large part because project staff had focused on well construction techniques, coverage targets, and related logistic issues but had failed to consider the communities in which the facilities were constructed.

Following a year of evaluation and discussion, project leaders and ministry officials developed a broad participatory approach that would require agents to spend much more time (up to two years in each community) identifying community leaders and encouraging religious leaders, traditional birth attendants, and influential women to discuss village problems and formulate local solutions. Field staff of the Ministry of Health were brought into the project to strengthen the content and delivery of health messages regarding environmental sanitation.

Under this new approach, project staff help communities formulate their own health plans. The subsequent construction of water and sanitation facilities is only one of several benefits. Although project staff contribute considerably to overall planning, individual communities are learning to interact with project staff and to reach a consensus regarding the village health plan and its implementation. This process of learning through continued dialogue concentrates on mobilizing and training community members. It is not concerned with forming new water and health committees, but rather with helping the community develop its own interest groups, which evolve over time.

✱Togo: Community Training for Problem Solving

An important feature of the Togo Rural Water and Sanitation Project is that it successfully integrated health education and community participation (the "software") with water and sanitation technology (the "hardware"). Over a period of seven years, the project provided potable water from boreholes, springs, and rainwater systems to 600,000 people in 864 villages. The project was noted for the large amount of pre-implementation community development support given by the Ministry of Public Health and Social Affairs. In particular, the ministry promoted a high degree of community participation and instituted comprehensive training activities for all project participants, including government field agents, members of village committees, and villagers using the new wells. The overall project approach to community participation was a continuous learning process during which the community learned to define and resolve its own problems.

Project implementation was the responsibility of the ministry, which concentrated on training at the local level, establishing village committees, and intensive promotional work in the project communities. Training was conducted in three tiers: instruction was first provided for government field agents, who then trained village development committee members, who in turn trained others in the community. Field extension agents received an average of 86 days of training in health education, community development, and construction

techniques. In addition, specific training programs were set up in each project community for committee members, pump repairmen, village women, and sanitation and oral rehydration therapy volunteers. A primary objective was to establish a development committee in every project community. Village women were encouraged to become involved by establishing specific committee positions for women. Much of the credit for the success of the program goes to these committees, which managed the pumps, created and managed a pump maintenance fund, and coordinated village tasks.

The program was promoted by ministry teams consisting of a social affairs agent and a sanitarian. Each team was assigned approximately 20 villages, which it visited about once a month. The extension teams provided field training and supervision for other field agents, village development committees, and village volunteers. They also participated in local planning activities and in the development of educational materials. An entire year was usually devoted to promotional work in each village before construction began on any water or sanitation facilities. Project sustainability following construction was stressed by providing training for village pump caretakers and repair teams, establishing a locally managed maintenance fund, and making available mobile regional repair teams from the Ministry of Water Supply.

Widely considered to be one of the most successful examples of the participatory approach in water and sanitation development, the Togo Rural Water and Sanitation Project owes much of its effectiveness to community participation, extensive training of field-level personnel, and the long lead time given to promotion in the project communities. It is estimated that 25 percent of the total project budget was spent on training and extension services.

Malawi: Community Participation through Organization

The Malawi rural piped water program illustrates how institutional development can foster community participation. Started in 1968 within the Ministry of Community Development and Social Welfare and supported by a variety of donors over the years, the Malawi program continues to represent a decentralized process with a high degree of community participation in the planning, mobilization, construction, and maintenance of simple gravity-fed water systems. Its success has been due in part to the system of committees used to organize and direct community efforts. To date, more than 50 schemes have been completed under this program, and they serve approximately one million people. In 1980, a Health Education and Sanitation Promotion (HESP) component was added to the program to promote improved latrines, clothes-washing slabs, and a variety of behavioral practices intended to maximize the health benefits resulting from the piped water supplies. Because of its enormous success in serving rural communities, the program has become known throughout Malawi and has received numerous requests for program assistance from unserved areas.

Responsibility for program implementation is currently divided between two government ministries--the Ministry of Works and Supplies (MOWS), which oversees water supplies, and the Ministry of Health (MOH), which promotes hygiene education and the use of various sanitation facilities. These ministries work through a series of committees established under the project. Committee members are generally elected by people living in

the area, and the committee leaders are drawn from community development councils or local branches of the ruling political party. During the construction of larger schemes, a main committee will be established to oversee the self-help program, section and branch committees set up to organize labor in larger subareas of the scheme, and village committees in charge of selecting standpipe sites and supervising labor in their villages.

Once construction is completed, most committees are either abolished or converted into maintenance organizations. Each standpipe will be assigned a tap committee, which will be responsible for tap operation and maintenance. Of all the various committees, these have the highest proportion of women members. In addition, each village or group of villages has a repair team that is charged with basic pipe repairs. Overseeing the entire scheme is a main water committee, which (1) supervises repair teams, tap committees, and system caretakers; (2) raises funds for system maintenance; (3) organizes self-help labor when needed; and (4) communicates with the two implementing ministries and the local district administration. Village health committees are also becoming increasingly involved in water supply and sanitation matters. An extensive program of classroom and on-the-job training is provided in the communities, and all program staff from the water and health ministries attend up to one month of refresher training courses every year.

Except for self-help labor and some locally donated materials, all capital costs are borne by the government. Routine O & M costs are met by the project communities, but the MOWS is responsible for major repairs and system expansion. In its 20 years, the program has proved to be highly sustainable. Studies have shown that over 98 percent of the more than 6,000 standpipes are in working order at any given time.

Guatemala: Provision of Water through NGO Activities

NGOs can also play an important role in the provision of improved water and sanitation services, as illustrated by the activities of Agua del Pueblo (ADP) in Guatemala. About 90 percent of the population of Guatemala lives in dispersed highland communities. Although water is abundant in these areas, it is difficult to deliver whenever and wherever needed, and therefore supplies are limited. At least three national agencies are involved in implementing water schemes in the rural areas, but ultimately these schemes are administered and maintained by local water committees. COPECAS, an association formed by these agencies, can do little more than provide general guidance since it lacks an institutional mandate and adequate human resources. As a result, NGOs have traditionally been used as executing agencies for water projects.

ADP has gained a deserved reputation for pioneering self-help community water projects. It has developed projects in collaboration with small villages. ADP makes effective and appropriate use of simple technologies and calls upon its workers to incorporate local materials, techniques, and ideas into the design. It responds to requests from villages and has established a system to develop community participation from the outset. A technician works with the inhabitants to identify the preferred level of service and community inputs in terms of labor and finance. At the same time, ADP's Education Group instructs the community in basic organization, accounting, and communication. The group also helps organize a voluntary committee that will take responsibility for the construction, operation, and maintenance of the

project. Health and hygiene campaigns are conducted in the schools and with groups of women, using films, demonstrations, and lectures. ADP has also made sanitation a rigid requirement of every water project it builds: the community must build pit latrines before work on the water system begins.

An integral part of ADP's extension approach is the training of intermediate-level technicians from local villages--Technicians in Rural Water Supplies (TARS)--who are taught on-site planning, surveying, design, organization, supervision, administration, and O & M skills over a six-month period. After training, TARS are expected to design and supervise at least two projects per year.

ADP subsidizes about 40-60 percent of the cost of materials for each project. Each village committee enters into a contract with ADP, but not until the entire community agrees to supply the labor necessary for the project. The contract stipulates that the community will pay back a soft loan amounting to an average of 60 percent of the cost of materials over a six-year period.

Philippines: Promoting Demand for Sanitation

The First Rural Water Supply and Sanitation Project implemented in the Philippines illustrates how intensive promotion can be used to generate demand for improved services. Initiated in 1983 and completed in 1988, the project provided for improvements in both rural water supply and sanitation. The sanitation component, which consisted of the installation of low-cost water-sealed toilet bowls, was preceded by promotion, health education, and technical and financial assistance. The program was implemented by the Department of Health with the assistance of local governments and was supervised by an interministerial committee that included the Department of Public Works and Highways and the Local Water Utility Administration.

Policies, guidelines, technical assistance, and logistic support were provided by the national Department of Health. However, the programming of implementation activities was initiated by the barangay (village) council in the communities. Promotional work was carried out primarily by the local Rural Health Unit with the assistance of the barangay health brigade and barangay health workers (all community volunteers), and in some areas the local rural water and sanitation association. More than 85 percent of the barangay health workers are women. The existing primary health-care delivery system was used to disseminate health information to residents and to promote community participation. All project personnel including health staff, barangay workers, and community leaders were given training to improve their management abilities and encourage them to participate actively in the program.

The greatest challenge in this program was to motivate families to improve their toilet facilities. It was found that local support could be generated by using community-oriented government agencies to manage the program. In part, support was garnered through personal associations between staff and local residents by appealing to traditions called "debts of gratitude." In addition, promotional campaigns were tailored to local circumstances. Once the actual sanitation campaign had begun, field staff worked with barangay leaders to prepare a local sanitation plan. In some areas, barangay leaders successfully enlisted the support of

civic organizations such as the Lions and Kiwanis clubs, religious groups, and mothers' clubs. During the course of the project, household requests for toilet bowls exceeded the available supply by a factor of four or five.

Participating households constructed toilets on a self-help basis. Sanitary inspectors provided toilet bowls free of charge to households, which were responsible for digging and lining a pit, constructing a wooden platform, and building a shelter. Technical assistance for construction and subsequent maintenance was available from the health staff and barangay leaders. Upon satisfactory completion of the construction, each household was issued a certificate of compliance. Periodic monitoring and surveillance of completed or rehabilitated toilets continues to be carried out by staff of the rural health unit, barangay, or local government.

Project costs included the toilet bowls, training and education materials, and overall project administration, along with salary incentive payments of 25-30 percent for Department of Health field staff. An additional food-for-work incentive equal to a five-day supply of rice was provided for some of the participating households. Individual households assumed the costs of construction of the toilet pit and superstructure, plus all expenditures for subsequent maintenance and cleaning.

Kenya: Community Management from the Start

The Kwale District Water Supply and Sanitation Project in Kenya demonstrates the importance of institutionalized community involvement in all phases of a project and the vital role an NGO can play in implementation. The Kwale Project was initiated in 1983 as a pilot project of the Ministry of Water Development (MOWD) and was expanded two years later on a districtwide basis. It is being implemented by the MOWD with the assistance of the Ministry of Health (MOH), the Ministry of Culture and Social Services (MOCSS), and a local NGO, Kenya Water for Health (KWAHO). The project management team reports directly to the district commissioner in charge of the donor grant funding.

The project represented a new approach in the MOWD's provision of water supplies that emphasized community development and a field design that took into account social as well as technical concerns. The weight eventually given to community involvement was a response to implementation difficulties that emerged when work first started, notably a disenchantment with water schemes owing to past failures and various complexities in working with local Muslim women. After a review, the project was revised to include more community involvement through a systematic work plan and collaboration with KWAHO on community liaison and training.

A key feature was the successful integration of sector ministries and an NGO at the district level to coordinate implementation. This multidisciplinary team of national staff helps rural communities construct simple low-cost water supplies, mostly dug and drilled wells equipped with handpumps. The communities themselves manage and finance the pumps. Because of the close tie between health education and community development, links have been established that make it easier to coordinate and organize multisectoral teams of

extension agents. Training was focused on nontraditional learning, materials development, approaches to community participation, and leadership skills.

Among the first activities to take place were informational and organizational meetings at which villagers took part in decision making and site selection. Following the establishment of committees, extension officers turned their attention to community training, particularly for long-term local management responsibilities. From the beginning, the project emphasized that although the wells were being installed by the government, the community was the potential owner.

In keeping with the participatory approach to project implementation, women were encouraged to participate as potential managers by joining well committees and acting as pump repair attendants. The well committees are the heart of the organization and management of these systems and play a role in local administration, financing of maintenance, revenue collection, handpump O & M, and bookkeeping. In their capacity as pump repair attendants, women receive hands-on training in system repair, installation, and preventive maintenance.

Although the MOWD pays most of the installation costs, the communities are required to initiate and collect funds to pay an initial portion of construction costs and to meet O & M costs. The local institutionalization of fee collection introduced for this purpose was much more successful than the government fee collection programs in earlier MOWD schemes. The well committees help the community establish and enforce a system of timely revenue collection and a plan for preventive maintenance and routine repair.

United States: Community Management without Direct Participation

Water supply development in rural America dates back to the early 1900s, but it was not until the Great Society programs of the 1960s that the federal government became an active partner in the process. Since then, sector development, especially among small rural communities, has spread rapidly through the combined efforts of the federal government, the private sector, and the communities themselves.[2] Various programs support the rural water-supply sector of the United States, but the ones of interest here are community-managed systems organized as homeowners' associations. The government's primary role in this example is to make credit and grants available, while the community is responsible for implementation.

The Farmers Home Administration (FmHA) is a federal program that provides financial assistance for rural water and sanitation improvements. The agency supplements funds from private lending sources with loans and grants (some of which are offered at concessional rates to low-income communities) and minor amounts of technical assistance.

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2. At present, there are approximately 52,000 community water-supply systems serving communities of 3,300 or fewer. More than 70 percent serve fewer than 500 people each. The ownership of systems serving populations of 3,300 or fewer is 38 percent local government, 29 percent private, and 33 percent institutional. Of the 15,000 private systems in the above total, approximately 5,000 are homeowners' associations of the type described here.

Between 1977 and 1987, FmHA provided 14,000 loans totaling $6 billion and 8,100 grants amounting to $2.4 billion. In the overall program of support for agricultural and rural development, these expenditures account for 8 percent of FmHA's total appropriation.

FmHA is basically a rural credit institution. Over the years, it has developed a variety of guidelines for organizing and operating community-managed water and sewer systems, but it neither promotes new systems nor attempts to generate demand for government credit. Community residents are the ones who initiate action or, as often happens, the private sector, working through independent attorneys and consulting engineers, promotes the concept of an improved system to the community. The resulting water users' association is expected to develop its own membership base, procure all goods and services for system operation and maintenance, repay the FmHA loan (and any other loans), and raise sufficient funds through water fees and other charges to meet all other capital and recurrent expenses.

The process is highly decentralized, and no single institution other than the water users' association itself is responsible for overall system management. Whether the system will survive ultimately depends on the association, which is a legal entity made up entirely of local residents. Except in unusual circumstances, FmHA provides no "safety net" or other extraordinary assistance to community systems in financial, managerial, or operational trouble.

Communities obtain management assistance through the National Rural Water Association (NRWA), a national network of statewide rural water organizations offering technical advisory, referral, and training services to independent water users' associations. The NRWA is a private-sector institution supported in part by subsidies from the Environmental Protection Agency, a FmHA contract, and fees collected from member associations. The distinctive feature of the NRWA is that technical services are provided through a peer-group support structure known as the "circuit-rider" system. The circuit rider is an operator with at least five years of experience with a rural community system who is employed by the NRWA to visit rural systems. As an ex-system operator, the individual has a better understanding of the practical problems confronting rural systems and is considered a peer by local managers and operators.

In general, the relationship between the government, private sector, and community works surprisingly well. Systems occasionally fail, and community associations sometimes (but not often) default on their loans. Overall community involvement in the activities of the association is minimal, except at times of crises when a high level of community activism is generated and aimed at correcting the problems threatening the association.

IV. COMMUNITY MANAGEMENT ISSUES

The preceding examples indicate that institutional factors, the local context, and the enabling environment all influence the development of management capacity.

Community Organizations, Groups, and Leaders

Few rural communities in developing countries have had much practical experience with successful development projects. The rapid changes characteristic of modern development may place heavy demands on traditional management systems. Without strong institutions or leaders experienced in the management of development, rural communities have no means of translating their needs into effective decision making. Projects are often co-opted by the elite or a few dominant individuals who profess to speak for the community as a whole but who in reality may not represent community interests. This is why community management has become important to the development of the poorest communities: it represents an attempt to mobilize and channel the will of the people to undertake and sustain development activities. In Sierra Leone, for example, religious leaders, traditional birth attendants, farming groups, and influential women were encouraged to participate in such activities when the program was reoriented to include informal leaders as well as formal ones. In the Philippines, the pilot project was able to add to existing health brigades through the barangay council responsible for community affairs.

The resulting empowerment of the people can both stimulate the existing leadership and encourage new leadership to emerge, and will eventually spark further development efforts. The new leaders may be charismatic individuals and natural organizers who can convincingly promote project initiation and development. When it comes to promoting improved water supplies, women may naturally be drawn into the effort because of their traditional roles as managers. As development proceeds, community institutions and the leadership within them may become adept at carrying out most management functions using powers delegated by the community without directly involving the community. The later stages of this process resemble the pattern found in the rural sector of many industrialized countries, where water and sanitation systems are owned by the community but are managed by a small professional staff. The users have very little direct continuing involvement in the systems except when important decisions have to be made concerning tariff changes, system rehabilitation, elections for the board of directors, and the like. This pattern, as described in the case study on rural water systems in the United States, clearly shows that there is less need for direct participatory involvement as management functions become specialized.

Unfortunately, little research has been done on the relationship between the institutional structure found in a community and the appropriate local management structure for newly introduced RWSS systems. What is known is that these structures may vary greatly--they may consist of informal groups, as in Sierra Leone; local village development committees, as in Togo; or village council-household links, as in the Philippines--and that indigenous management of the allocation and distribution of rights to traditional water sources has been

practiced for centuries. The provision of new water resources may disrupt long-held traditions by altering the existing balance of power over the control of water rights. In some cases, this may manifest itself in a plural management structure, wherein traditional leaders or the local elite may hold power over appointed or elected committees and groups.

The institutional structure of a community is but one dimension of its larger social structure--its value systems, religious beliefs, and subsistence strategies. The nature of these components depends on the way community members adapt to the local environment. At least four types of governing/managing institutions can be found in rural areas today: (1) traditional (authority is exercised by hereditary chiefs, ruling families, or leaders elected by traditional methods); (2) appointed (authority is exercised by local representatives elected or selected by the community); (3) elected (authority is exercised by local representatives elected or selected by the community); and (4) informal (authority is exercised indirectly by women and leaders of influential community organizations such as health committees, churches, special-interest groups, private businesses, etc.).

At the same time, subtle differences in public and private decision-making patterns have an effect on the way authority or responsibility is exercised in the governing institutions. Community decisions based on village consensus may be reached in many ways--through the authoritarian leadership of individuals or dominant elites, the vote of open assemblies of community residents, or the agreement of representative bodies. Such arrangements are well adapted to the resource constraints facing villagers and community groups in developing countries. These traditional patterns may be well entrenched where water as common property is concerned and may pose an obstacle to any attempt to redefine responsibilities. Some of these patterns pertain to the role of women. As the principal users of water, women have played an important role in managing traditional water points and have a vested interest in the provision of new supplies.

Management may also be influenced by individuals or institutions that have no official role in the project or system, but have some other reason for wanting to have a say in development. These indirect managers often exert influence from positions of leadership within local institutions. In some cases, they may even play a more dominant role than the "official" management body. This has occurred in some of the ethnically diverse Togolese villages where the dominant ethnic and political groups prevailed in decision making despite efforts to secure balanced representation. Pressure can be brought to bear by local leaders, politicians, local and regional government officials, development committees, national political figures, and external agency personnel such as officials of agencies responsible for water and sanitation.

Relationship between Community and External Agencies

The realization that life, health, and hygiene depend on an adequate water supply has led governments throughout the developing world to try to meet this basic need through public services. Usually the government has assumed the primary role in meeting these needs. If this role is to shift and communities are to assume managerial responsibilities, the activities

of the government must be redirected and those of the community and private sector redefined.

A basic assumption of this study is that the community management approach cannot succeed unless the relationship between the community and the external agencies it must deal with is well defined. The areas in which the community operates as an autonomous management unit with full responsibility, authority, and control must be clearly spelled out. Otherwise, the resulting void will be filled by those with the most power, normally the external agency. Guidelines on planning resource coverage developed by the World Health Organization (WHO) provide a useful framework for delineating such responsibilities. The process consists of three basic steps:

> **Step 1: Assign project responsibilities.** The community and the agency discuss community needs, prepare a preliminary project plan, identify corresponding resource needs, and make a preliminary assignment of project responsibilities.
>
> **Step 2: Determine resource needs.** The community and the agency examine specific project requirements to estimate the costs and resources the proposed project will require. Resource needs may include money, time, materials, and labor, depending on the project.
>
> **Step 3:** Accept project responsibilities. The community and agency conduct a final review of the assigned responsibilities (Step 1) and the estimated resource inputs for the selected project (Step 2). This step concludes with a formal agreement between the community and agency regarding project responsibilities and the provision of resources.

Detailed outlines of responsibilities are useful because they reveal the complex network of relationships that exists within the community, public sector, donor agency, private sector, and NGO. Each network consists of relationships between various entities whose priorities may differ and affect the execution of defined roles. The network is particularly complex in the case of the public sector, which, like the "community," subsumes various groups. It is not unusual for the provision of water supply to come under a number of ministries, both those that oversee technical matters and those concerned with social services. In Kenya, for example, the Kwale project was implemented by the Ministries of Water Development, Health, and Culture and Social Services with the assistance of a local NGO. In Malawi, responsibility for project implementation was divided between the Ministry of Health and the Ministry of Works and Supplies, while in Sierra Leone, the Ministry of Energy and Power played the leading role initially but was subsequently assisted by the Ministry of Health. The management systems within these same ministries may also vary greatly, as may the content and delivery of their extension services.

These relationships must be clarified if communities are to become effective managers.[3] This issue was addressed in a recent World Bank review on rural water supply strategies that argues strongly for putting the community in charge of its own development: "The community itself must be the primary decision maker, the primary investor, the primary maintainer, the primary organizer, and the primary overseer" (Briscoe and de Ferranti 1988). The primary role of government agencies and donors "must change from that of direct providers and financiers of services to that of facilitators." The responsibilities and attendant relationships between the community and external agency arising from the redefinition of roles can be summarized as follows (Briscoe and de Ferranti 1988:9):

- Users must decide on the type of improvements to be made.
- Users must pay most of the costs of the chosen services.
- Users must take responsibility for maintaining the facilities they have chosen and built.
- Governments and external agencies must establish the type of environment in which communities can construct, operate, and manage improved facilities.

As the government and donor agencies shift from being implementors to being facilitators of RWSS services, they will acquire a variety of supportive functions. A particularly important one for the government will be to act as a promoter and educator. Government should provide training, disseminate information, and offer technical and managerial assistance on matters pertaining to RWSS. The government can also act as a regulator of conflicts between water users and help them establish realistic standards for water quality, water-supply equipment, and service levels. A third responsibility will be to provide financial assistance in the form of loans and grants to communities having difficulty raising funds or to act as a financial intermediary between the community and credit institutions.

The roles outlined above imply that, ideally, the community and government should function in partnership, that neither party should attempt to dominate the other, and that each should endeavor to understand and accept its role. This newly emerging relationship in water and sanitation imposes new demands on these parties: communities must become the focal point of decision making, while governments must help create and support the conditions in which community-based actions can occur.

Redefining the partnership between communities and the government also means re-examining the role of the private sector, particularly in areas of water and sanitation where the private sector appears to perform better than the government--such as providing technical support in design and construction, supplying specific technical services (e.g., well drilling), supplying materials (e.g., pipes and pumps), contracting for specialized construction tasks, and fulfilling specialized maintenance tasks (Briscoe and de Ferranti 1988). In the past, however, governments have not been very supportive of the private sector. If the new approach is to

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3. Much of this discussion has been drawn from the work of Briscoe and de Ferranti (1988).

be adopted, governments will need to reduce constraints affecting the development of the private sector and provide support mechanisms such as training, certification, and reduced import tariffs on essential supplies. By way of example, India developed the Mark II hand-pump with the support of UNICEF and then allowed it to be manufactured widely by the private sector. In some countries, government support has taken the form of assistance to local artisans. In Lesotho, for example, a UNDP-sponsored rural sanitation project trained local latrine builders in VIP latrine construction, and they were then able to offer themselves for hire to the community.

The important role that NGOs play in facilitating community participation suggests they can play a similar role in promoting community management. Not only can they provide the intensive attention required to promote community management, but they can also do so over a long period of time. They are also in a good position to help coordinate and integrate RWSS activities that fall under the responsibility of different ministries. In the Kwale project, a local NGO (KWAHO) coordinated the training activities of the existing extension services of three ministries. However, government collaboration with an NGO such as KWAHO requires sufficient financing to implement and follow through on the necessary training. In Guatemala, Agua del Pueblo has played a leading role in promoting village-based water projects that are financed to a large extent by the communities themselves.

Community Management Functions

A distinctive feature of sustainable community-managed systems appears to be that some form of community management takes place in all phases of the project. Management can consist of a variety of functional activities and structural roles, depending on the phase of development--preparation, implementation, or O & M. Therefore, management functions are best discussed in the context of the project cycle (see Table 3).

The field examples demonstrate the variety of management functions performed by community organizations. During the preparation phase, management functions can occur in any of the following activities: identifying a common problem, organizing a community response and possibly requesting outside assistance, negotiating with external agencies, and participating in project planning and design. During the implementation phase, management functions may consist of decision making in the mobilization of local resources, collaborating with external agencies, supervising project activities, and monitoring and controlling construction. During the operational phase, the community takes on the dominant functions of system manager and operator. Decision-making activities in this phase include supervising operation and maintenance, monitoring and evaluating the system, overseeing financial administration and cost recovery, planning for system improvements and expansion, and collaborating with external agencies.

To be effective, the community must be able to carry out its decisions without undue external restraint or support. Note that the degree of involvement may change as community capacity for management increases. Thus, a community that may not have been involved in the planning and design of a government-sponsored water system because it was not ready for this activity may be ready to handle O & M responsibilities. This is often the case when government regulations apply to the choice of technology, but do not extend to

TABLE 3

Development Phases in Rural Water Supply and Sanitation Projects

Phase 1: Preparation	*Phase 2: Implementation*	*Phase 3: Operations*
(initial planning to final project agreement). Involves project initiation requests, reconnaissance surveys, community mobilization meetings, field surveys, project design and negotiation, and final project agreement between community, development agency, and financing institution. At this point, the project is ready to begin taking shape in the field.	(construction and system-related activities are operational). Includes awarding contracts, assembling materials and equipment, training construction and operational staff, field construction and monitoring, system testing, orientation sessions in hygiene education, and handing over of the completed system to the owner-operators. The costs of the project preparation and implementation phases are considered to be capital investments.	(system-related activities subsequent to the completion of the project). Among these are routine O & M, periodic staff training, hygiene education, water fee collections, tariff revisions, replacement and rehabilitation, and system monitoring and evaluation. Operational-phase activities are considered to be recurrent investments. Major expansions or changes in the system are normally viewed as new capital investments that renew the cycle of project preparation and implementation.

decision making in other important areas of operation. It may also be that by the time of project construction or subsequent system operation, conditions may have changed and allow (or even encourage) the community to take over certain important responsibilities. This has happened in the Philippines, where the maintenance of improved sanitation facilities became a household responsibility. In this case, daily community management of individual point services was not necessary. Instead, village-elected councils and other local organizations played a role in promoting the project, negotiating with external agencies, and ensuring effective hygiene and user campaigns to sustain the benefits realized through improved sanitation.

Note, too, that although community management refers to the exercise of power by the community, it is generally done by specific individuals. Direct community management is carried out by individuals with official or contractual responsibilities for project development and system operation, such as operations managers and members of the local water board or water committee. These individuals have clear responsibilities to make decisions regarding the system and to represent the interests of the users. Evidence suggests that user representation in community management shifts in content as the level and reliability of the service increase.

This shift is particularly evident in cases where increased emphasis has been given to the role of women as managers, in recognition of the fact that they are the primary users of water. Many development projects have tried to involve women in maintenance and fee collection. In some of these cases, women assumed an active and leading role when water was scarce, but reassessed their participation as service levels and reliability increased (Grey 1988). A second point to note concerning the role of women has to do with the dimension of management they are assigned. In Rwanda, when women were elected in significant numbers to management positions in the local user association, they carried a disproportionate share of the work involved in fee collection. This was a time-consuming task that carried little authority, and a relatively small share of decision making within the board of directors. This is similar to the situation in Togo and Malawi, where women play key roles in O & M but not in decision making. In contrast, in Kenya's Kwale project, the conscious decision to involve women in all aspects of management contributed significantly to the project's success. This strengthens the argument that community capacity helps to promote development and thus that it is important to foster management capabilities within the community.

Although community authority, responsibility, and control over decision making are essential components of community-managed systems, this does not mean that all decisions must be made by the community, leaving the government or external agency with little or no role in project development and system operation. As mentioned earlier, government institutions generally have regulatory powers, some of which are likely to have been delegated to the agency dealing with the community. From a decision-making standpoint, a community may be active in one area of project development, but not in others. Similarly, it may make decisions on some aspects of its system where conditions are appropriate for community initiatives, but not on others where community resources or experience are lacking.

Resources Required for Community Management

When community management practices are adopted, additional resources are usually required to strengthen local decision-making capabilities and promote supportive conditions (i.e., create the enabling environment). A high priority in this regard is to involve the community in project planning--if not initiation--in its capacity as the eventual owner of the system.

Costs may be incurred in other phases of the project cycle. During the preparation phase, additional funds may be needed to support the organization and training of community water committees; during the implementation phase, to strengthen local management of community construction contributions; and during the operational phase, to maintain effective community control over system maintenance, staff training, water fee collection, and coordination with external agencies. It is important to continue building the local capacity to manage resources beyond the initial project and planning phase. Most community-managed projects--especially those in which community enthusiasm is strongly promoted by the government during planning and construction--cannot be sustained on local resources alone and will eventually fail unless they obtain progressive support.

It takes both agency and community resources to establish or strengthen community management capabilities. The agency may have to provide support for training

additional staff in the social and organizational skills they will need to work with communities, plus related expenditures for transport, information materials, and equipment and supplies. One lesson from past experience is that close attention must be given to creating an enabling environment, and thus to the role played by the promoter. During the intensive training given to field extension agents in Togo, instruction focused on technical and social details, and included periodic topical and refresher courses. Three-fourths of this training (142 days) was devoted to community relations and planning techniques because villagers failed to perceive a need for new water sources. In contrast, villagers in Malawi recognized that the scarcity of water was a severe problem, but promoters faced the problem of clarifying responsibilities and expectations regarding construction.

In view of the great variety of contexts promoters will encounter when attempting to facilitate participation and management, it is vital to train field extension agents and promoters to resolve many types of problems. The WASH project, which has devoted considerable attention to this very issue, has demonstrated that the success realized by the promoter, most often an extension agent, depends on specific functional training in such areas as initial organizing and data gathering, problem solving, project planning and implementation, environmental hygiene, O & M, and evaluation (Isely 1981; Isely et al. 1982; Isely and Yohalem 1988).

The WASH project also identified the steps needed to enable communities to assume control (Isely and Yohalem 1988). To begin with, promoters should undertake specific ongoing tasks. One of the most important is to transfer basic problem-solving and project-development skills to the community. By organizing community groups and communities, training community members, and facilitating tasks as necessary, promoters provide learning experiences for community members. An important rule for promoters to follow, however, is *not to do anything for the community that the community can do for itself.*

The specific amounts that the community and the agency will need to provide will depend greatly on the pre-existing management capacity of the community (see Table 1) and the amount of improvement desired. The community should expect to provide some level of participation, time, leadership skills, and possibly physical support facilities such as meeting places and offices. Its participation may range from representation on water committees, physical labor in construction, training as pump repairmen, or bookkeeping and fee collection. The most important resource a community can provide is the willingness to support project development to the limit of its capabilities.

Presumably, the costs of these additional resources will be more than adequately covered by the additional benefits derived from greater community management of water and sanitation systems. Some experts argue that although expanding the role of community participation in water and sanitation projects increases the start-up costs, the long-term operational costs will be lower (Yacoob and Warner 1988). Unfortunately, there are few empirical data on the additional costs resulting from project inputs intended to encourage community management. Some field experience suggests that the participatory approaches basic to community management can account for a significant portion of total project costs. The training and support costs for the extension components of community participation and health education in Togo, for example, equaled 25 percent of total project costs and required up to 18 months to implement.

Benefits of Community Management

The concept of community management has received increasingly favorable attention in recent years because the systems based on this principle appear to be more sustainable than those managed externally. If this is the case, such systems should produce even greater benefits than improved water supplies: better health and an increase in the time available for other activities. These benefits appear to accrue in three stages (Warner 1981):

- **Immediate behavioral changes:** short-term improvements in system performance such as greater use of water and sanitation facilities, adoption of improved hygienic practices, and greater community support for system maintenance.

- **Changes in support conditions:** long-term improvements in available resources and complementary investments.

- **Long-term impacts:** anticipated health, social well-being, economic, and environmental quality changes.

Another critical factor to consider here are the *perceived* benefits central to the concept of community-managed systems. Experience has shown that community willingness to pay for and use improved water systems is based on the perception that the new services are marked improvements over traditional sources. Most often this attitude is present when communities are involved from the very start in identifying the problem they wish to address and the level of services and technology they want and can afford. The authority to make those decisions is at the heart of the community-management concept.

Furthermore, when the community participates in all stages of a project, the opportunity to consider the financial consequences of various service levels is presented early on. This enables users to debate the pros and cons of various options and to select the system most appropriate for their perceived needs. By assuming a leading role in the planning, construction, financing, and management of new supplies, communities obtain the system they want and will support. This may allow communities to extend their own service coverage at a faster pace and beyond the level of services that the government could realistically provide. In Kwale, for example, some villages are considering financing additional handpumps locally, while others are planning to upgrade their service levels to piped systems.

Because community-managed systems place the responsibility and authority for operations and maintenance in the hands of the users, maintenance is usually more efficient and effective, and overall performance is better. As consumers *and* owners of improved supplies, the community users will be motivated to keep the system performing efficiently. They will therefore want to establish and enforce timely revenue collection systems and schedules for preventive maintenance and routine repairs. In centrally managed schemes, the completed systems often are in disrepair or operate below capacity.

Three important long-term benefits that may accrue at the micro-level are the potential spinoff effects on other development sectors within the community, improved health, and potential financial savings. With the steady strengthening of its capacity to handle simple systems, the community may develop the capacity to manage more complex services. This experience could prepare the community for involvement in other sectoral development activities and increase its power over local issues. Projects can be instruments for encouraging change. If a project is successful in promoting permanent, or at least sustainable, change in a few communities, then the larger institutional framework of society and the government might also be modified, although to a much lesser degree. Over time, as the small changes from projects accumulate, rural populations can make significant progress in gaining control over their own development. This process can also create jobs, as in Guatemala's Rural Technician program.

The long-term impact of overall project sustainability on health should be obvious. In addition, as users themselves, managers are in a visible position to extend the impact of newly installed services, for example by drawing attention to their own adoption of hygienic practices or by supporting health campaigns.

In addition, various financial benefits may arise when the government and local communities share costs. This approach is essential if governments hope to provide potable water and sanitation services to the entire population of the country. Until recently, funding agencies and governments assumed that local communities could not contribute very much toward service improvements and thus subsidized even minimum levels of service. As the funds available for projects steadily decline, new schemes tend to be underfunded and the resulting services are often of poor quality and unreliable. When services are inefficient, cost recovery tends to be low.

As mentioned earlier, the chances of recovering costs from within the community are substantially higher when communities perceive a benefit from improved supplies and have a direct hand in decision making. Community-managed water systems are often more successful in collecting funds for capital and recurrent costs and institutionalizing effective fee-collection systems. RWSS systems also perform better when the community is responsible for maintenance. The implications for government cost-recovery schemes are twofold: (1) when communities contribute to capital costs and recurrent-costs savings, governments may be able to achieve broader national coverage; (2) when maintenance is community based, additional indirect savings might accrue because there is less need to spend limited foreign exchange on the vehicles and imported fuel required to maintain a centrally managed system.

Constraints on Effective Community Management

The first step in overcoming the constraints to the adoption of the community management approach is to find the resources needed to strengthen or establish the local capacity for management. Even when such resources are available and efforts are made to facilitate community management, efforts may still fail for a variety of reasons. From the viewpoint of external agencies, community-managed projects are riskier than centrally managed ones. A particular concern is that the project will suffer if the agency relinquishes some degree of control over establishing advance project schedules, budgets, designs, and expected

outputs. Community partnership implies local consultations and collaboration, which means it will take additional time to start and complete the project. Such collaboration may not only further delay the project but may also create unrealistic expectations that planners and field personnel are not equipped to fulfill.

In the absence of a clear government mandate to support such efforts, programs can also be subverted in any number of ways by the normal bureaucracy, as well as partisan politics. Overlapping or contradictory sectoral programs can further complicate the implementation of grass-roots programs. Government officials may also feel apprehensive about the spinoff empowerment effects, particularly if there is any danger that the community-managed project may be co-opted by political or other groups, as in Guatemala. There political unrest has convinced many government officials that community self-help projects are dangerous, foment dissent, and can lead to organized rebellion. Meanwhile, in the Philippines, local officials used the sanitation program to win political support.

For their part, communities often complain about the lack of incentives--which at times amounts to outright discouragement--when it comes to assuming a leading role in improving RWSS systems. Communities have therefore learned to be dependent, patient, and compliant and to expect the government to be the provider (Schautz 1988). Consequently, communities become frustrated and angry when a government policy of "free water for all" shifts to one of "water as a public commodity. " Typically, the areas that most need such services are inhibited by scarce local resources and limited access to the necessary services.

Such communities also face competing priorities for development. Whatever infrastructural support is available from the public sector is seldom adequate to provide the services necessary to facilitate local management of resources. Extension services are often overcommitted, and there are too few training programs in participatory techniques to enable technical staff to interact effectively with communities. Even where staff have been trained in community outreach, community management may be difficult to promote because private-sector sources are unable to provide spare parts and tools. This is happening in Togo: the centralized maintenance system does not function as planned because funds are short and coordination within the Ministry of Water Supply is poor. Spare parts are not always available in remote areas, and ministry pump repairers have little incentive to work. This weakness in the enabling environment has inhibited the development of full community management.

Undeveloped or ineffective private-sector support can further hamper the sustainability of community-managed RWSS. Private-sector support is often vital when it comes to tool procurement, local production, and the distribution of spare parts. Small businesses that feel the demand and profit margin are too small may be further dissuaded from attempting to stock such items because of poor service from central supply houses. At this level of distribution, tariffs, import restrictions, and basic logistics may constrict private-sector growth. In other instances, the lack of incentives or training may dissuade local artisans from constructing additional schemes or improvising steps to upgrade existing systems. Another problem may be the high costs and difficulty of obtaining technical services such as well drilling and tool repair.

To a great extent, the constraints on community management can be traced to the differences in the objectives of external agencies and communities. Whereas the agency tends

to be efficiency oriented and concerned with keeping costs down and sticking to implementation schedules, the community is more likely to be effectiveness oriented and concerned with sustaining system services over the long term. This dichotomy may be due in large part to the undue emphasis that water and sanitation development agencies place on project implementation. Until the objectives of agencies and communities can be made more compatible, tensions--or what some call contradictions between agency concerns for project implementation and community concerns for system services--will no doubt remain. One way to reduce these differences is to foster community management, but it will first be necessary to show that such an approach is in the interests of both agencies and communities.

V. CONCLUSIONS

Field experience demonstrates that neither community management nor community participation can, in themselves, facilitate the development of management capacity. Rather, management capacity can be built only through a partnership between the community and external agencies, so that agencies enable rather than provide. In this way communities acquire the necessary skills to move to higher levels of management capabilities.

Management capacity cannot be built quickly. The process consists of several stages, and the level of management capacity differs in each. Communities in which an external agency assumes a directive and didactic role develop only limited management capacity (Level II). This situation is typical of most water and sanitation projects sponsored by central agencies and funded by external donors. The Sierra Leone experience provides an example of this level of capacity and also shows how it can be changed through greater emphasis on community involvement. After six years of field activities, project staff realized that the lack of effective collaboration with the community was nullifying the progress that had been made in expanding service coverage. Although technically appropriate hand-dug wells were built, they were not maintained and fell into disrepair. Subsequently, project staff adopted a broader participatory approach by shifting their focus from construction to collaboration. The results have been encouraging, as communities are now initiating plans for construction as an output of their own health plan. This example shows how external agencies can help communities increase their management capacity.

The facilitative, participatory approach that is now being adopted in Sierra Leone was a significant feature of the early project development phases in Guatemala, Togo, and Malawi. At the time of writing, the communities involved are showing signs of advancing to the moderate level of management capacity (Level III). Although external agencies have not relinquished their management role in project development, they have delegated sufficient authority, and turned over enough control, to enable and encourage the communities to take on joint responsibility for the development and O & M of their completed systems. The approach to promoting community participation at this level is intensive, and the primary purpose is to achieve full management capacity and empowerment. In Togo, promotional activities last anywhere from one to two years before system construction. This enables communities to prepare for their management responsibilities. In all these projects, the organization and development of community committees and the training of committee members were major project objectives consuming considerable project resources. Authority for sharing in decisions about project preparation and implementation is delegated to community organizations, which also share control over project execution. In Malawi, the main committee and the branch committees that supervise self-help community labor in digging trenches and laying pipe later assume responsibility for O & M.

The transition to the next level of management can be seen in Kenya. Unlike the other field cases cited, in this one the promotion and development of community responsibility were integral parts of all project stages. In each scheme, the community is in charge of the system, while the external agencies retain important supportive roles to facilitate ongoing

development. Many committees have become registered as self-help groups, licensed to speak for their communities in other areas of community development. Communities are responsible for the operation of their new systems and have the authority to make operational decisions and control their execution. One sign of success is that effective systems have been established for recovering costs and maintaining RWSS services.

In the Philippines, community management reaches yet another level: users assume primary responsibility for ensuring daily maintenance, and the community plays a central role in promoting the services and providing ongoing community and user education. While individual households manage individual systems, the barangay leaders link households to external agencies. The household-barangay relationship is representative of community management at Level IV.

Community-managed schemes in the rural United States illustrate another side of community management in which broad community participation is not necessary. Rural residents choose to substitute money for personal involvement in system affairs. While technical, social, and financial resources may be of a different scale than that found in developing countries, the example may be more appropriate for developing areas that are socially and economically complex. These systems are organized around homeowners' associations run by elected boards as nonprofit corporations. All users of the system are fee-paying members of the association. As in the other examples, however, an external agency plays a vital role in providing an enabling environment, which includes institutionalized resources such as a regulatory framework, available discretionary loans and grants, and access to technical services through the private sector.

The higher levels of management capability seen in the examples from Kwale and the United States were reached by making the operational premise for participation responsibility rather than initiation. That is to say, in both cases community ownership--and responsibility--were stated prior conditions. From this beginning, the community (or its representatives) identified the level of service users could afford and would support. This willingness to pay is another important perspective of management capability. A community's commitment to help finance its water and sanitation system is a measure of its management capacity. In the Kwale project, the community established an efficient O & M system and a fee schedule that covers recurrent costs and a small portion of capital costs. In the U.S. schemes, users are expected to help repay loans and raise funds to meet other capital and recurrent costs.

In both cases, high levels of community management capability appear to be associated with higher (but not necessarily full) cost recovery. The communities in the Kwale District pay only a small share of the capital costs of their system, while many of the poorest communities in the U.S. example receive significant grants-in-aid and pay only part of the capital costs of project development. Although some communities are better able to manage a project than to support it financially, the disparity between internal support and management capacity is unlikely to be extreme. In contrast, the management functions in Togo and Malawi are at a lower level. In these cases, the communities provided voluntary labor, local materials, and sometimes small contributions. Although local responsibility for O & M was greater than in the initial phases of Sierra Leone, a government agency usually funded (or at least was responsible for) major repair costs.

The core issue that emerges from the foregoing discussion is one that has been of concern to development planners for some time: What are the most effective, and thus most appropriate, roles for the public sector, the private sector, and the community in the delivery of rural water supply and sanitation services? To begin with, the government and donor agencies must stop seeing themselves as providers and, instead, act as facilitators. This implies a strong commitment in government policy to community-based approaches, by providing legitimacy, supervision, and the assistance needed to sustain such efforts. Because of the Malawi government's strong support for the community-based approach, it was able to enforce changes despite the opposition of vested interest groups in various ministries. For example, it reorganized a cumbersome bureaucratic framework and provided participatory training for technical staff. With this kind of government support and collaboration, and a clear definition of responsibilities, it is possible to promote community responsibility at the earliest stages of a development project.

The private sector, both private businesses and NGOs, can supply various goods and services that will also promote community management. In Kenya and Guatemala, local NGOs were able to provide the close attention needed to successfully train local participants and set up community outreach programs that were not practical to undertake in the public sector. Or, as in the case of the United States, the private sector can help with system development or provide contracted extension services for both technical and management tasks.

The opportunities for community management depend on the institutional RWSS framework that is in place, and on the degree of community participation it allows. Community participation contributes to the all-important enabling environment that community management requires in order to function. Before community management can begin to develop, however, the responsibility for making and executing decisions must gradually move into the hands of the community. Eventually, that responsibility should be present at every stage of project planning, from initiation and planning to operation and maintenance. In this way, the community assumes responsibility, authority, and control over its own development. Women can play a critical role in the transfer of responsibility, acting as decision makers as well as users. In Kwale, women participated in the design of technology, operation, maintenance, and cost recovery. The emphasis on promoting women as managers from initial phases of a project has contributed to the sustainability of systems. In the Philippines, women helped to ensure their family's support for constructing and using latrines. In some areas, women initiated campaigns to raise community funds for materials to complete toilets. Both these projects indicate that systems are functioning and being used with a high degree of success.

It must be remembered, however, that community-managed systems take time to evolve. This is not a quick process, and it can run into considerable costs in terms of technical staff, transport, information materials, and equipment. Also, few clear guidelines are available on how to proceed with the process. Institutions may need to be established to handle the delivery of services, and practical guidelines formulated on how institutions and communities can collaborate to create the enabling environments that will support the move from participation to management. The relationship between community willingness to pay and perceived benefits should be identified and brought to users' attention.

Community management is without doubt an appealing solution to the current sustainability problems rural communities are experiencing with water supply and sanitation services. Community responsibility appears to have the potential to ensure internal support and thus reduce the high rates of nonuse, breakdown, and misuse that have plagued new systems in developing countries. With the expected higher rates of cost recovery from such a community-based approach and the associated capital and recurrent cost savings, governments and donors could expand national coverage. But before any move can be made in the direction of community management, governments must face two hard facts: at the outset of the process, they will be required to provide additional resources to develop local capacity for management and establish enabling support systems; and they must be prepared to undertake a fundamental bureaucratic reorientation of the project development cycle so that the concept of community management can be introduced in each stage.

VI. RESEARCH PRIORITIES

Although community management seems to hold great potential for promoting development in rural areas, further steps should not be taken in this direction until an effort has been made to formally test the hypothesis that strong community management does in fact lead to sustainable water supply and sanitation systems. High priority should be given to research in three areas: (1) the institutional framework; (2) the enabling environment; and (3) community willingness to pay.

Institutional Frameworks for RWSS

The first task should be to test the hypothesis that the government's role should be redirected from that of provider to that of facilitator. The roles of the community, the public sector, and private sector will have to be examined in depth.

Community. Empirical information is needed to illustrate community management in its early stages. This could be drawn from field evaluations of RWSS projects. The following questions are of particular interest here:

- What thresholds of management exist in the provision of RWSS services?
- What are the characteristics of the management process in place in the current phase of the project as well as in earlier phases? Who manages what aspect of system development, what are their functions, and how did they acquire these skills?
- What ministries, NGOs, and other private-sector groups are involved in providing RWSS? What are their responsibilities, and what approaches are taken at the grass-roots level?

Public sector. If the role of the government is to be redirected, it will have to take on a variety of supportive functions such as promotion, education, and regulation. In some cases, it will also have to act as financier or financial intermediary. A review of public-sector roles in RWSS should focus on the following questions:

- How do national RWSS programs differ in their sectoral approaches?
- How and to what extent do donors and multilateral agencies influence national policy (financing, conditionality, technical assistance)?
- Where can the public sector support local initiatives?

- What management methods are currently employed in sectors involved in RWSS, and what training is necessary to implement community-based approaches?

Private sector. The private sector can often provide skills, materials, and services at more affordable rates than the public sector. The following questions should be posed:

- Who provides technical and support skills, materials, and services, and how?
- What incentives would further stimulate this involvement?
- What role do informal artisans and other micro-enterprises play in water projects? If it is limited, the question could be applied to related areas such as technology or agriculture. (International private voluntary organization experience with the promotion of wood-burning stoves in Africa might be one area of research.)
- What role do NGOs play in implementing projects?

The Enabling Environment

The second task should be to test the hypothesis that the enabling environment contributes in large measure to the success of community-managed systems.

Community support structure. The capacity and willingness of communities to manage their RWSS change in response to the social, economic, and political context. The following questions must be answered before promotional guidelines can be developed:

- What is the current relationship between socioeconomic context, local infrastructure, and development experience? What levels of service and program design are in place?
- Do extension programs overlap within and between sectors, and what are the potential synergistic effects of the overlapping?

Extension. The process of community management should also be investigated from a broad perspective to identify other factors that can be used to develop guidelines on management promotion. The main questions to ask here are:

- What implementation approaches are used by different ministries, NGOs, and the private sector in the provision of new supplies? Are they effective?
- What financial and technical resources (staff, materials, training, and equipment) are lacking?

- What promotional guidelines can be formulated on the basis of the extensive WASH study of the promotion of participation and the role of local promoters?

- What further points should be reviewed concerning private-sector extension systems?

Financing. A separate study should examine financing. It should include an analysis of different types of financing schemes such as subsidies, revolving loan funds, grants-in-aid, credit, and savings plans within the context of the local and national infrastructure.

Comparative advantage. Different participatory approaches should be examined to determine their comparative advantages.

- How do the implementation methods and results of various participation and management approaches differ?

- Can other promotion and extension methodologies such as social marketing and training and visits be used to promote community management?

Community Willingness to Pay

The third task should be to test the hypothesis that community willingness to pay for and use improved water systems is based on the perceptions that new services are marked improvements. The following questions are of particular interest here:

- What guidelines can be formulated on willingness to pay on the basis of the empirical data (decision-making factors, levels of service, socioeconomic context, etc.)?

- What indicators of sustainability can be identified with respect to operation, use, performance, cost recovery, and expansion?

- To what extent do women act as managers in each project phase and service level, and do they contribute to service reliability?

APPENDIX 1
WORLD HEALTH ORGANIZATION DRAFT GUIDELINES: WATER PROJECT SUSTAINABILTY ELEMENTS

1. Community institutions and administrative mechanisms: water committees, women's groups, accounting systems, etc.
2. All technical and nontechnical skills required to implement community-based projects.
3. Supportive attitudes: understanding, motivation, choice, willingness to assume ownership, etc.
4. Community extension services: provided by agency.
5. Community acceptance of levels of service and related costs.
6. Appropriate technology: suitable to community needs.
7. Operational phase inputs: cash and in-kind inputs.
8. Operations and maintenance support: provided by others outside the community.
9. Formal allocation of responsibilities between community and agency.
10. Execution of system responsibilities by community and agency.

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