COMMUNITY MANAGEMENT OF RURAL WATER SUPPLY SERVICES IN MOZAMBIQUE

DEVELOPMENT PROCESS, ISSUES AND DIRECTIONS

STUDY PAPER

Author :

Gijsberth Lamoree (M.Sc.)

Supervision :

IRC, International Water and Sanitation Centre,
François Brikké (M.Sc.)

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Foreword

This report is the result of the individual study programme that I have completed at IRC, the International Water and Sanitation Center, between June and October of 1997. The study was made in the framework of the "study leave" facility of DGIS (Directorate General of International Co-operation), of the Minstry of Foreign Affairs, for sector professionals returning to The Netherlands after the end of contract.

During the study period, I have had the opportunity to work together and interact with a great number of professionals from the rural water sub-sector from all over the world at IRC, both those visiting for meetings or courses, as well as the professional staff of IRC. Furthermore I have been able to do an extensive literature search and put together a small bibliography on the subject of study.

The subject of study itself has undergone some changes since the beginning of the study programme. Initially the emphasis was to lie on the study of "the demand driven project approach" and on "management options for rural water supply systems". In coordination with IRC staff this was later broadened to the whole area of community management of rural water supply services, but including the original two topics.

The purpose of this report is twofold. First of all it reflects the knowledge that the author has gained after studying the subject for several months at IRC. Secondly, it reflects the synthesis that the author has been able to make on the basis of the knowledge gained and his detailed knowledge of the water sector in Mozambique. It is the authors desire that the report may serve both the group of sector professionals in Mozambique who have not had the privilige to study the subject so extensively and in such a professional environment, as well as the group of international sector professionals who are not fully acquainted with the water sector in Mozambique, and the reality of that country in general.

It must be strongly emphasized that this report was written by the author as a learning experience. It does not pretend to be in any way a complete framework for the development of sustainable rural water supply services in Mozambique. It merely aims to make a contribution to the thinking on the subject.

Finally, this report reflects the opinions and viewpoints of the author only, and not necessarily those of the study supervisor or the IRC.

Acknowledgements

The author would like to express his gratitude to the IRC for facilitating this study. The availability of office space, computer equipment, the extensive library with Internet facilities, the attention of the IRC professional staff as well as many other aspects have made it possible for me to fruitfully work on the study programme. All together I have found the professional athmosphere at IRC to be profoundly stimulating and productive for the realization of this study. A heart-felt thanks to all, but in particular to Mr. Jo Smet, Manager of the Africa Region within IRC.

Special and cordial thanks I would like to extend to my study supervisor, the unsurpassable Mr. François Brikké. Right from the beginning of the study programme, and inspite of enormous amounts of other work, he has dedicated much time and attention to guiding and directing me on the slippery path of knowledge acquisition. Numerous times he has sat down with me to discuss the major topics and components of the study. I have found these discussions intellectually highly stimulating and useful for the development of my thinking on the subject. Bravo François!

I would like to thank also all my colleagues and friends, sector professionals and others, in Mozambique with whom I have had the privilige to work in the last five years, and which experience has helped me tremendously in the development of the framework of thinking that is presented in this report. Although the number of people that I would need to express my gratitude to is far too large, I would like to at least mention Ms Angelina Xavier, Mr. Américo Muianga, Mr. Justino Bahane, Mr. Marcos Mponda, Mr. Lucas Chairuca, Mr. Jim Barton, Ms S. Gaye Thompson, Mr. Peter Wurzel and Mr. Christian Hubert. Viva a nossa unidade!

Finally, it is imperative that I make mention of the numberless people that I have met during my work in the rural areas of Mozambique, in the framework of rural water supply or other projects. The suffering and the poverty that I have seen has impressed upon me the certainty that our work as sector professionals is and must always be for the benefit of people. Other considerations, so I firmly believe, must never be allowed to trouble our vision. Abaixo à pobreza!

Ben Lamoree
The Hague, The Netherlands,
October 1997

1. Introduction

1.1 Rural Water Supply in Mozambique

The water sector in Mozambique is divided in urban and rural water supply and water resources management. Since 1987 the implementation of projects for the provision of rural water supply services in Mozambique has been the responsibility of the National Rural Water Supply Programme (PRONAR) which was created in that year within the National Directorate of Water (DNA), part of the Ministry of Public Works and Housing (MOPH).

Rural water supply not only includes simple handpump systems, but also what is known as "pequenos sistemas" or small piped systems. Where large systems, especially those of the 12 largest towns in Mozambique, is the responsibility of the Urban Water Supply Department (DAS) within DNA, the responsibility for all others, some not being very small, lies at present with PRONAR.

The implementation of rural water supply projects would run along two lines. The first was direct implementation by PRONAR through its decentralized body the Provincial Rural Water Supply Workshops (EPAR) in coordination with the Provincial Directorate of Public Works and Housing (DPOPH). The second was implementation through Non-Governmental Organizations (mainly international ones) in coordination with both PRONAR and the DPOPH and often with involvement of the EPAR. The implementation as well as management of projects was highly centralized with a major role for PRONAR in all project phases. The nature of the programme, taking into consideration the war situation in the country, made this approach the most effective at that moment. Nevertheless this highly centralized approach resulted in poor O&M services being extended to rural water supply systems, leading to quick breakdowns after construction and slow or no repairs being done.

In 1991/92 the concept of decentralized maintenance of handpumps was introduced with the promotion of VLOM (Village Level Operation and Maintenance) together with the introduction of the AFRIDEV handpump. The component of Community Participation and Education (PEC) became more important from then on. As a result the O&M of handpump systems has improved and spare parts are available in all the provinces for handpump caretakers to buy and use. The poor O&M of small piped systems has hardly improved, however. These systems also suffer from the fact that their ownership is not well defined and the institutional setting in which they have to function is not very facilitating for the users to be able to assume responsibility for the systems. This problem remains until today.

No reliable data with respect to rural water supply coverage exist in Mozambique. Estimates vary between a lowest of 20% and a highest of just under 40%. More data will become available after the completion of the census in August 1997 and the various provincial inventories that have been carried out recently. In any case, at present, real coverage levels remain among the lowest in Africa. There are also very few data available on the ratio of pumps and systems functioning as part of the total number of pumps and systems. The National Water Policy, approved of by the Government in 1995, defines increased coverage levels and the sustainability of services as the two main targets for the rural water supply and sanitation sector.

In 1997 a study into the sustainable provision of rural water supply services was published, recommending the introduction of the demand driven approach and the decentralization of service and implementation responsibility.

1.2 About Sustainable Development

Development, that is the satisfaction of human needs and aspirations, involving the progressive transformation of economy and society, has been a reality ever since the ascent of mankind[1]. Nevertheless, and notwithstanding all the development efforts of centuries past, the world is confronting a self-generated environmental crisis. This crisis became apparent in the 1960s and 1970s. The first scientific effort to analyze and explain the environmental crisis was made by the Club of Rome in their benchmark report "Limits to Growth" in 1973. Later, the concept of sustainable development was proposed by the World Commission on Environment and Development in 1987, also known as the Brundtland Commission[2].

The most wide-ranging and all inclusive definition of sustainable development was given in the Brundtland report "Our Common Future"[3] : *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* or furtheron : *"In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations".*

Developing sustainable provision of rural water supply services

Translated to the microlevel of the provision of rural water supply services, this means that the choice and management of the water source, the decision on investments, the technology choice and the institutional arrangement under which the water supply service will function, should not only be in harmony with but also enhance both the current and future potential to meet water needs. The concept of the demand driven approach, thought to be strongly related to the sustainability of rural water supply services, which will be discussed more in detail in chapter 2, is clearly, though implicitly, present in this definition of sustainable development.

It can be said that sustainable development of rural water supply services (and not only) is a gradual process. Any project or programme for the development of sustainable rural water supply services, if applying a demand driven approach and implemented through community based organizations, will take a relatively long time to reach its objectives. Figure 1 shows this graphically[4].

Within this framework, a development project or programme is considered sustainable when it is able to deliver an appropriate level of benefits for an extended period of time after major financial, managerial and technical assistance from an external donor are terminated[5].

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[1] Our Common Future - The World Commission on Environment and Development - Oxford University Press, 1987 - chapter 2

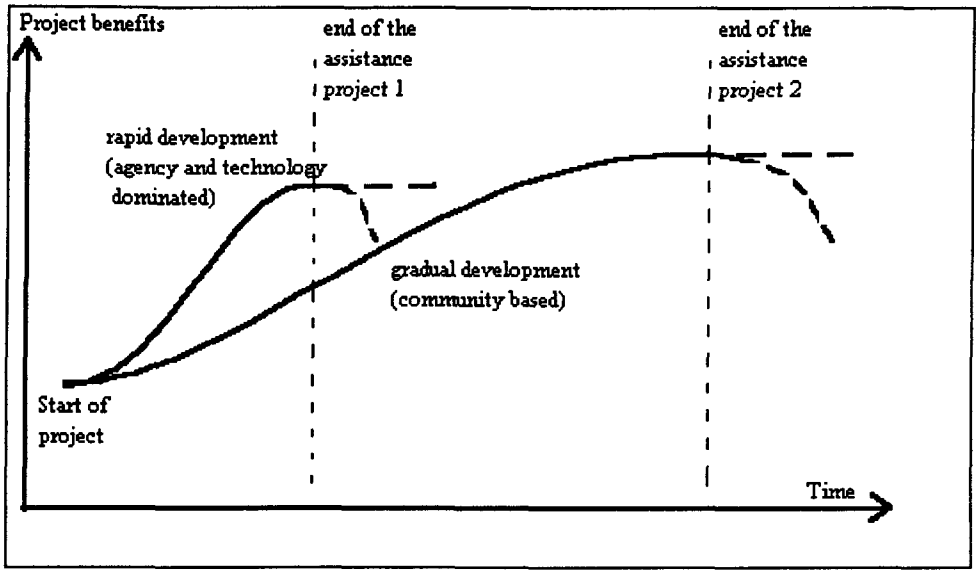
[2] see also : Water in Our Common Future - A Research Agenda for Sustainable Development of Water Resources - Jordaan, J.; Plate, E.J.; Prins, E.; Veltrop, J. - Committee on Water Research - UNESCO - Paris, 1993

[3] Our Common Future - The World Commission on Environment and Development - Oxford University Press, 1987 - page 43, 46

[4] Making your Water Supply Work- Operation and Maintenance of Small Water Supply Systems - IRC Occasional Paper Series 29 - Brikké, François; et al. - The Hague, 1995 - page 6

[5] Development Assitance Committee of the Organization for Economic Co-operation and Development (OECD), from : Management of Operation and Maintenance in Rural Drinking Water and Sanitation - Working Group on Operation and Maintenance - A Resource Training Package - IRC/WHO/WSSCC, 1993

Figure 1 : Realizing and sustaining benefits over time.

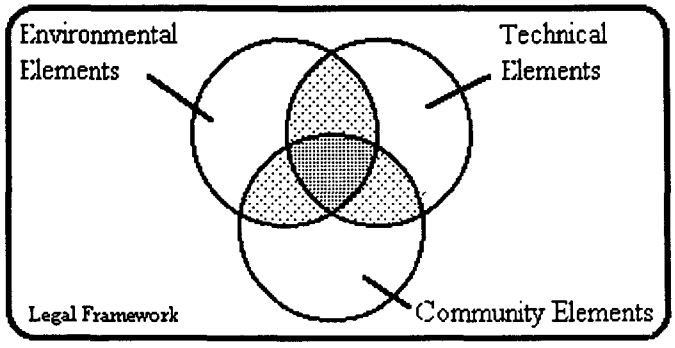


In literature a number of key elements for sustainability were distinguished. These are :

- elements related to the legal and institutional framework in which the water supply service must operate, such as strong institutions, an enabling environment, a supportive attitude of other actors in the sector, etc.;
- elements related to the community itself, such as health awareness, a felt need and consequently supportive attitude, the presence of expertise and skills, etc.;
- technical elements, such as appropriate service level, appropriate technology, the availability of materials and equipment, etc.;
- elements related to the environment, such as water resources management, pollution control, erosion control, etc.

The different elements are related and influence eachother. Sustainable development is thought to be possible when all elements come together. Figure 2 shows this graphically[6].

Figure 2 : Elements of sustainability



[6] François Brikké, adapted from : Making your Water Supply Work- Operation and Maintenance of Small Water Supply Systems - IRC Occasional Paper Series 29 - Brikké, François; et al. - The Hague, 1995 - page 7

With respect to the legal and institutional framework, it can be said that this must be geared towards facilitating sustainable development. The overlap between the circles indicates the mutual influencing of the different elements. For instance, the sense of ownership in the community is influenced by the technology choice.

Sustainable development of rural water supply services at present takes place in the context of important institutional changes worldwide, that are reflected in national policies and programmes of restructuring. The most important of these is the general drive towards decentralization, in which the role of central government is changing and responsibilities are handed back to lower levels of government that more directly represent the people and their communities. This is further discussed in chapter 2. Other global processes influencing the process of sustainable development are presented in section 1.3.

Finally, an important development in the thinking about the sustainability of rural water supply services is the linking of the concept of sustainability to that of capacity[7]. A rural water supply service will not be sustainable if there is no sufficient capacity to manage it, defined in different areas of (1) skills and abilities, (2) public awareness and (3) economic factors and support infrastructure. This will be further discussed in chapter 2.

[7] Capacity Building for Water Supply and Sanitation Development at Local Level - The Threshold Concept - Len Abrams - presented at the UNDP Symposium on Water Sector Capacity Building - December 1996 - page 2

1.3 Community Management of Rural Water Supply Services - Recent Developments

Community management of rural water supply services is thought to contribute to the sustainability of those services. In the last 15 to 20 years a number of good handbooks have been published on the subject of community management[8] [9]. The reason for implementing community management of rural water supply services has been given as[10] :

- it leads to reliability, sustainability and replicability
- it is a stimulus to community development
- it works.

Further reference is made to the mentioned handbooks.

Community Management in Wider Perspective

The issue of community management is closely linked to the much larger framework of community development. Community development is meant as the increase of a community's capability to organize and manage its own development priorities[11]. Community development, in its turn, lies at the heart of the integrated development paradigm, in which the empowerment of people and their communities as a means to take control of their own situation is the overall development objective.

Community management of water supply services could thus be considered as a sub-objective of the development objective which is empowerment of people and their communities. With this objective of empowerment in mind, it becomes very clear that people and communities should make their own decisions about what water supply service they want, and that they themselves should be the principal actors in the preparation, implementation and management phases of the water supply service. This is what lies at the heart of the recently developed so called "demand driven approach". This is a "bottom to top" community development model in which the initiative for change, such as for instance the improvement of the water supply service, is taken by or the full responsibility of, the community. Chapter 2 will further explore this concept.

Historical Developments

Further justification for the community management option can be found in the socio-economical and political developments in the world in the last 50 years. In the developing world, subsidized and centrally managed water supply services came under increasing pressure from the beginning of the 1980s onwards, due to the decrease of available budgets. This phenomenon, that occurred all over the developing world, was caused mainly by the adoption of structural adjustment plans by the respective governments as a response to the international debt crisis of the end of the 1970s and the beginning of the 1980s. The concept of community management of water supply services that was also developed in the 1980s coincided well with the drive for the decrease of public spending because it mobilizes the resources of communities to manage their water supply services, thus decreasing the need for government financing. This factor is thought to have contributed substantially to the acceptance and development of the community management option.

On the basis of the mentioned socio-economic developments and concepts a drive for democratization and decentralization of government has occurred all over the world from the end of the 1980s onwards. The concept of community management also coincides well with this drive. In particular the recently developed demand driven approach, in which the provision of water supply services depends principally on demonstrated demand, also in economical terms, of the community is in close harmony with the drive for democratization and decentralization.

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[8] Community Participation in Water and Sanitation - concepts, strategies and methods - White, Dr. Alistair - IRC Technical Paper 17 - The Hague, June 1981

[9] Community Management Today - IRC Occasional Paper 20 - The Hague, June 1993

[10] Community Management Today - IRC Occasional Paper 20 - The Hague, June 1993 - page 7 - 9

[11] Community Management Today - IRC Occasional Paper 20 - The Hague, June 1993 - page 9

2. Community Management Development Process

2.1 Introduction

In developing community management of rural water supply services in a country like Mozambique, much can be learned from developments in other countries and the thinking and knowledge on the subject in general. When examing the literature, a large number of important issues can be found that have to be taken into account. Some of the most important of these are :

- community development
- participatory methods
- gender awareness
- technology choice
- demand driven approach
- capacity building
- operation & maintenance
- decentralization
- private sector and NGOs
- alternative management models
- cost recovery

Also it can be concluded from reviewing current literature that the sustainable provision of rural water supply services is still difficult to attain. No model or blueprint exists that will guarantee the sustainability of rural water supply services and the thinking on the subject is still very much in development.

In this chapter the different issues that are part of the process of developing community management of rural water supply services will be presented in the framework of the project cycle, thus indicating in which context they are most significant. Nevertheless, it must be kept in mind that the different issues have their implications in other parts of the project cycle as well. Their presentation in one specific part of the project cycle merely serves as a vehicle to understand the relevance of the issue in it's most important context.

2.2 Creating an Enabling Environment I : Decentralization

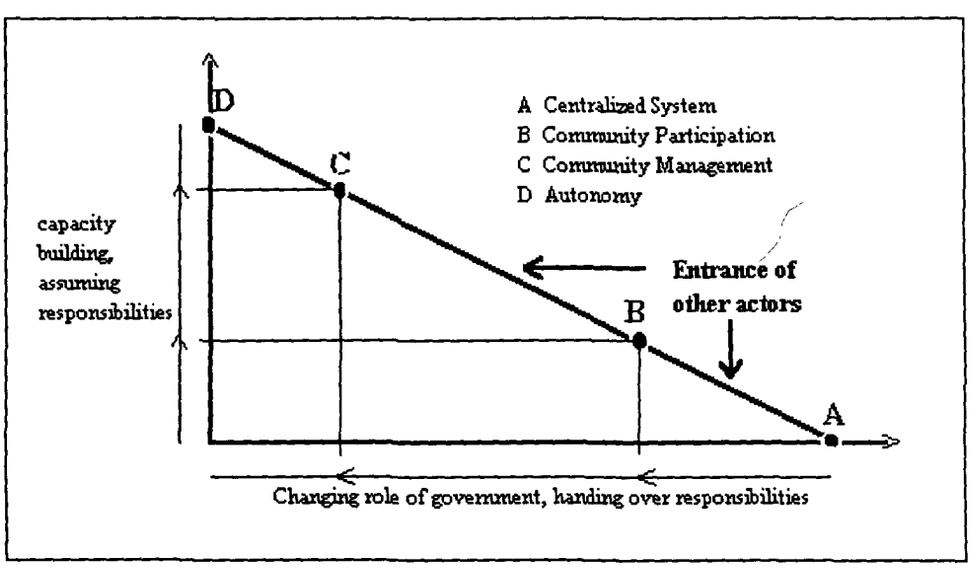
There are different type of decentralization of governmental roles and responsibilities :

Box 1. Types of decentralization[12]:

1. **Devolution** is the transferring of authority and responsibility for decisions, management and resource mobilization to local governments (regional or municipal). In a fully devolved system, higher levels of government have no direct, operational role in service delivery or resource mobilization once power is transferred. However, they might retain a regulatory role or facilitate funding. The concept is to "turn it over" to a lower level.
   An example of decentralization by devolution in Mozambique is the formation (in preparation and under discussion) of the local level government units at municipal level in the framework of the democratizaton process of the country. These municipalities will be elected and responsible for operational activities, such as water supply, at their level of government.
2. **Deconcentration** describes various types of adminstrative arrangements that place resources and staff at lower levels within the same administrative structure. Deconcentration is a reorganization scheme in which power may be retained at the center or delegated, as desired.
   An example of decentralization by deconcentration in Mozambique is the creation of the "PRONAR Delegation Central Region" of the country, which is essentially part of the the PRONAR organization, but at a decentralized level.
3. **Delegation** is the process of a power center's assigning operational duties or responsibilities to a surrogate unit or "concessionaire" which is autonomous. This can be a public or a non-public sector entity. An example of decentralization by delegation in Mozambique is the creation of the regional water resources management bodies or ARAs.

Decentralization in rural water supply essentially means the change of roles and responsibilities with respect to rural water supply service provision, not only of the government, but also of communities. This will be discussed and presented in this section and the following. This change of roles and responsibilities can be pictured graphically :

Figure 3 : Changing roles of government and community through decentralization



[12] Designing and Implementing Decentralization Programs in the Water and Sanitation Sector - Edwards, Daniel B.; Rosensweig, Fred; Salt, Edward; - WASH Technical Report no. 89 - Arlington, VA, July 1993 - page 5

Decentralized Management of Rural Water Supply Services

By involving the community in the management of water supply services, the principle is followed that "nothing should be done at a higher level of government than can be done satisfactorily at a lower level".[13] Moreover, beneficiary communities should not only be involved, but the management responsibility for rural water supply services should be decentralized to them, that is, handed over permanently to them. This is decentralization by devolution. It is important to note that the legal and institutional framework of the water sector of the country wishing to implement community management will usually have to be adapted to this new situation in which ownership and management and/or responsibility are defined differently than before and in which groups, such as water committees, that previously had no defined legal status will have to be attributed one.

It must be mentioned in this context that community management of rural water supply is not the only management option that can lead to the sustainable provision of those services. Especially with respect to small piped systems, management options in which the private sector or municipal government is responsible for management of the water supply services can also be sustainable, depending upon the situation.

Decentralized Project Implementation

Apart from the management of rural water supply services, the planning and implementation of rural water supply projects can also be decentralized. In Mozambique, the democratization and government restructuring process that will eventually lead to the formation of semi-autonomous municipalities in the whole of the country, implies a devolution of all matters related to water supply services, including their planning and implementation, to the local level. In the initial phase, that will start in the beginning of 1998, municipalities will be formed in the larger and some of the medium-sized urban centers only) However, this will be a long process that will also require considerable input from higher levels, especially in capacity building, to be successful. Therefore, and in the meantime, the presently felt need to decentralize the planning and implementation of rural water supply projects may make an intermediate solution desirable.

Intermediate Decentralization

Several options exist for such intermediate decentralization. The most obvious ones in the case of Mozambique, would be the deconcentration to regional or provincial level [14]. Chapter 3 looks into this option, for instance through the Provincial Directorates for Public Works and Housing - DPOPH.

An option that has been applied in other countries is the use of intermediate organizations that already have a presence in the field. In South Africa, where a similar process of decentralization and democratization is going on, such an intermediate solution has been found by extending the mandate of the Water Boards to include the provision of services directly to the consumers in the absence of functioning local authorities[15]. Another possibility, although arguably less appropriate as an intermediate solution but more as a permanent one, lies in the creation of public companies with the mandate to plan and implement rural water supply projects (Ghana, Uganda).[16]

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[13] Participation in Water and Sanitation - Gabrielle Watson, N. Vijay Jagannathan - Participation Series Paper no.2 - Environment Department Papers - The World Bank - Washington, February 1995 - page 5

[14] Study of the Institutional Arrangements for the Provision of Rural Water Supply and Sanitation Services in Mozambique - Cowater International - Ottawa, Ontario, Canada, 1997

[15] Water Supply and Sanitation Policy - White Paper - Department of WaterAffairs and Forestry - Republic of South Africa - Cape Town, November 1994 - page 27, 38

[16] Personal communication with rural water supply professionals from those countries and from the World Bank

Making Decentralization Work

The most commonly stated objectives of decentralization are increased effeciency and responsiveness to communities. However, decentralization will not automatically achieve these objectives. Successful decentralization processes contain the six key elements that are presented in box **2.**[17]

Box 2. Key Elements for Decentralization

- *Facilitating the change of roles* at central and decentralized level by clearly defining responsibilities, coping with resistance to change, etc.
- *Participating in planning and resource allocation* The decentralized levels should participate actively in the planning process and in allocating resources.
- *Accessing centralized resources* There should be a clearly understood process for accessing resources that are to remain under central control.
- *Generating and controlling revenues* The decentralized level should be able to generate and control revenues.
- *Assigning authority* Managers at the decentralized level should have authority consistent with that delegated to managers in parallel ministries and governmental organizations at the same level
- *Staffing* Managers at decentralized level must have control over staffing so that staff are loyal to local management rather than to a body at higher level. Staff numbers and skills should be appropriate to the functions that have been decentralized.
- *Providing management tools* such as computerization, management information, equipment, administrative systems, etc.

Legal and institutional frameworks designed for the decentralization of government will have to take these key elements into consideration in order to make the decentralization process sucessful.

[17] Adapted from : Designing and Implementing Decentralization Programs in the Water and Sanitation Sector - Edwards, Daniel B.; Rosensweig, Fred; Salt, Edward; - WASH Technical Report no. 89 - Arlington, VA, July 1993 - pages 8, 25

2.3 The Pre-Planning Phase : Demand Driven Approach

In the last five years, the notion has become accepted that a water supply project can only be successful if there is a genuine demand for improved water supply services by the beneficiaries. This has led to the development of the demand driven approach in project planning. In this approach improved water supply services will only be provided when their is a genuine demand in the community. This demand therefore has to be assessed before or in the planning phase of the project.

About Demand

Demand expresses the quantity of a certain good or service that buyers are willing to acquire at a given price, considering their income and their preferences.[18] In the specific case of water for household use the change in demand differs relatively little with changes in the price of water, or, the price elasticity of water is low while the demand elasticity is high. Independent of income and preferences, there will always be a certain minimum demand for water.[19] [20] The price elasticity of water being low, a high willingness to pay is expected by the target group when there is a genuine demand for improved water supply services.

Although the demand elasticity of water is high, demand for improved water supply services is found to be relatively strongly influenced by a number of factors, such as :

- felt need for better water
- preferences with regard to water and water supply
- ownership
- decision-making process
- financial cost

In the planning process, these factors need to be taken into account when preparing for the realization of a new water supply service, in order to improve the level of acceptance by the population.

Assessing Demand

At present several methods are used to assess the genuine demand for improved water supply services. One of them is the "Willingness-To-Pay" (WTP) survey in which a certain target group is interviewed with respect to their willingness to pay for different forms of improved water supply. The WTP survey is an application of the so called Contingent Valuation Methodology, a survey method used to approximate the benefits accrued to a population by the provision of non-market goods[21]. Although the WTP survey can give relatively valuable information about the demand for improved water supply services that is present in a community, the method also has some disadvantages. One of those is the fact that it is not known whether or not the respondents are genuine in their answers to the interviewer. Furthermore, willingness to pay does not yet indicate affordability, or capacity to pay. Extensive literature exists with respect to WTP surveys[22] [23].

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[18] Dictionnaire Economique et Social, Hatier, Paris, 1990

[19] Economie Generale, Chapitre VI Le calcul économique du consommateur et la demande - Biales/Goffin - Les Editions Foucher - Paris 1981

[20] An Approach to the Economic Analysis of Water Supply Projects - Laszlo Lovei - Policy Research Working Papers Water and Sanitation WPS 1005 - Infrastructure and Urban Development Department - The World Bank - Washington, October 1992 - chapter 4

[21] Measuring the value of potable water in partially monetized rural economies - Jared J. Hardner - Water Resources Bulletin of the American Water Resources Association, vol.32, no.6, December 1996

[22] for instance : Paying the Piper - An Overview of Community Financing of Water and Sanitation - IRC Occasional Paper Series 18 - Edited by Phil Evans - The Hague, 1992 - chapter 5

[23] The value of time spent on collecting water : some estimates for Ukunda, Kenya. Case study of the World Bank policy, planning and research, staff, infrastructure and urban development department - Whittington, D., X. Mu, and R. Roche - The World Bank, 1989

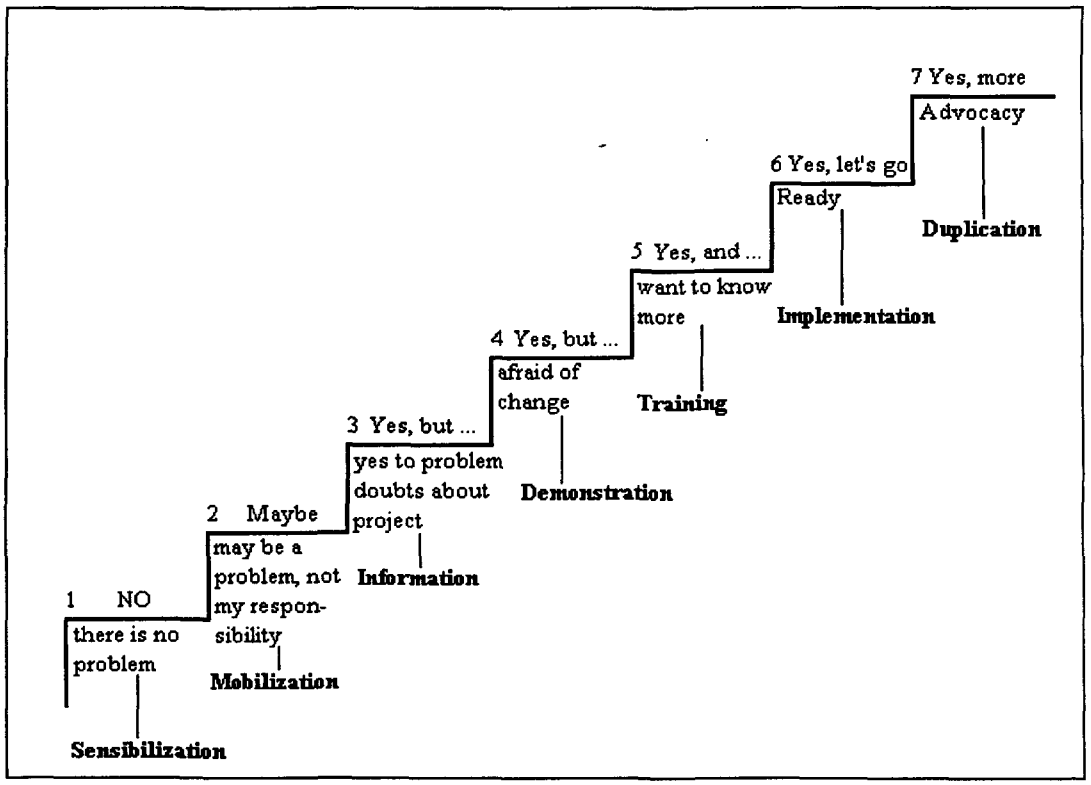
Another way of assessing demand for improved water supply services, and that has been used in addition to a WTP survey, is to request its direct expression by the target group. In recent years projects have been designed and implemented in many countries over the world, including African, in which the possibility of acquiring improved water supply services was made known to the target group, often through social marketing involving radio and community mobilization, and for which the target group would have to apply themselves, while adhering to certain "rules of the game" before being eligible for selection. In this way demand is expressed in a more direct and concrete way than in the WTP surveys.[24] Often a contribution is asked from the community in order to become eligible for inclusion into the project, thus demonstrating directly willingness to pay, and to a certain extent, capacity to pay.

Enhancing Demand

With respect to demand, it must also be kept in mind that demand is not a homogeneous, nor a static thing. Communities are not homogeneous and the existence of demand at the end of the day depends on people's perceptions of their own needs. Not necessarily are these perceptions always correct or valid. For instance, the link between clean water and disease may elude certain people, while other do have an awareness of the importance of clean water. Logically this will influence the demand for improved water supply services. In the case of rural water supply, the demand for improved services may be enhanced, for instance, by providing basic health and hygiene education to the target group. This will lead to a greater understanding of the importance of hygiene and hence to a stronger preference for improved water supply services.

The different attitudes of communities and individuals within them as well as ways of influencing them, can be visualized in the following way[25] :

Figure 4 : Attitudes of individuals and communities and possible actions



[24] personal communication with rural water supply professionals from Uganda, Malawi and South Africa

[25] François Brikké - adapted from : SARAR. See for instance : Tools for Community Participation - A Manual for Training Trainers in Participatory Techniques - Lyra Srinivasan - PROWWESS/UNDP Technical Series, 1990

Demand is not homogenous though. A community or target group consists of many individual households with different levels of economic and social development. Such differences will also be reflected in different demands for improved water supply services. It has been found in many projects that actual demand very much depends on the available technology options and/or service levels for improved water supply, not only to the target group as a whole but also to individuals in the target group (for instance yard taps for those who can afford it). If the available technology options and/or service levels for improved water supply services are not in line with the perceived wishes of the target group, demand for those improved services will be found to be low.[26]

Demand driven projects allow people to choose the level and type of service that is most appropriate for their needs and financial situations. Each beneficiary must have some choice over service level, based on their willingness to pay. They also must receive sufficient information about the different technology options, their respective investment and O&M costs, the requirements of management and other implications, such as training and the risks that accepted commitments cannot be met, to make informed decisions.[27]

Therefore, a demand driven planning approach envisages individuals and organizations with interests in water supply projects making key investment and operational decisions.The institutional arrangements under which demand can be revealed often are crafted best when stakeholders have a say in the design and management process.[28]

Thus, the demand driven approach ultimately aims at generating a process of empowerment of the community and the individuals within that community.

[26] Beyond Participation : Locally Based Demand for Environmental Health in Peri-Urban Areas - Robert C.G. Varley; May Yacoob; Scott Smith; - Environmental Health Project - Arlington, VA, December 1996

[27] Participation in Water and Sanitation - Gabrielle Watson, N. Vijay Jagannathan - Participation Series Paper no.2 - Environment Department Papers - The World Bank - Washington, February 1995 - page 17-18

[28] Participation in Water and Sanitation - Gabrielle Watson, N. Vijay Jagannathan - Participation Series Paper no.2 - Environment Department Papers - The World Bank - Washington, February 1995 - page 6

2.4 The Planning and Implementation Phase : Community Development and Gender

Once a village or community has become eligible and has qualified and been accepted by the project-implementing support agency on the basis of expressed demand, the planning and implementation phase with the community can begin. It must be kept in mind that the objective of this project phase is not to realize a water supply system but to facilitate a process of community development on the basis of which the community itself will be able to realize its water supply system, with outside input (financing, contracted work) facilitated by the project-implementing support agency. This process has already started in the pre-planning phase by leaving basic choices with respect to investment to the community. Either in the pre-planning phase or in the planning phase a participatory diagnosis of the water supply needs of the community should be made. On the basis of that, matters such as technology choice (as far as not yet dealt with in the pre-planning phase), site selection, formation of water committees, organization of cost recovery systems and mobilization of in kind contributions must be dealt with by the community itself, with the help of the project-implementing support agency.

Technical components in the phase of project planning and implementation include (1) mapping and technical surveying to support planning and site selection, (2) a participative design and technology choice process with the community[29], (3) construction of the water supply system (drilling of boreholes, digging of wells, laying of pipe networks, installation of pumps and construction of civil works) and (4) technical training for system operators and maintenance technicians.

Promoting Community Development

Although the technical components of the planning and implementation phase of the project are usually the more visible ones, the essence of the project lies in the process of stimulating and promoting community development in order to facilitate the community to take its own decisions with respect to its water supply systems and to facilitate equally the necessary external resources in order to realize the demanded water supply system.

Tools that can be used in this phase are participatory needs assessment, community information meetings, participative planning meetings, hygiene education, training sessions, demonstration visits, etc[30].

Capacity to Manage the Rural Water Supply Service

Capacity, in the broadest sense of the word, to be able to successfully implement community management of the water supply service on a long term basis, is necessary at the community level in three areas[31] :

1. Skills and abilities in community and local government organizations, private sector, etc.
    - technical skills for operation, repairs and maintenance;
    - administrative skills for the collection of revenues and contributions, book keeping and accounting, etc.;
    - governance skills for problem definition, planning, leadership, etc.;
    - the ability to build consensus, resolve conflicts, etc.;

[29] Linking Technology Choice with Operation and Maintenance for Low-Cost Water Supply and Sanitation - Operation and Maintenance Working Group of the Water Supply and Sanitation CollaborativeCouncil - IRC, The Hague, 1997 - chapter 2

[30] Tools for Community Participation - A Manual for Training Trainers in Participatory Techniques - Lyra Srinivasan - PROWWESS/UNDP Technical Series, 1990

[31] adapted from : Capacity Building for Water Supply and Sanitation Development at Local Level - The Threshold Concept - Len Abrams - presented at the UNDP Symposium on Water Sector Capacity Building - December 1996

2. Public awareness in the community
    - hygiene and health awareness;
    - civil responsibility to ensure proper accountable governance and public support for the service as a basis for willingness to pay;
    - awareness of property and ownership matters;
    - acceptance of water committee's authority;

3. Economic factors and support infrastructure
    - revenue flow, through capacity to pay at community level and/or subsidies;
    - support infrastructure such as office accomodation, transport, banking facilities, communications, electriciy, etc.

It is important to emphasize that this capacity must exist or be created through a capacity building programme, before the management of the rural water supply service is handed over to the responsible community organization.

Results to be expected from the community development and capacity building process thus include the formation of water committees, user groups, maintenance groups, as well as the raising of a general awareness in the community of the importance of personal hygiene, the importance of safe water supply and knowledge about the project and the respective roles of the project-implementing support agency and the community itself (capacities mentioned under groups 1 and 2). The economic factors as well as the existence of support infrastructure are more difficult to influence with the process of community development, although for instance income generating projects and general development may be a result or follow-up of this process, thus influencing in the long term the economic viability of the community and thus of its water supply system.

Gender

In the rural areas of Africa, the provision of water in the household is the daily burden of women. It therefore makes sense to involve them as key actors in the management, operation and maintenance of water supply services. Nevertheless, men also have their specific roles. Gender refers to the different areas of responsibility, work and authority held by men and women and the impact this has on their lives and positions. Gender refers to both men and women. This means that in all stages, water supply projects take into account that men and women have different roles and responsibilities, decision making powers, access to resources and needs, in order to arrive at a more equitable sharing of project benefits among men and women. A gender perspective to the development of community management of rural water supply services is further important to prevent men getting a dominant role and women a dependent role in an area where they formerly used to be independent[32].

The primary rationale for the involvement of women is thus found in the improved management and sustainability of projects that can be brought about. Gender sensitivity and a consequently better involvement of women in planning, design, execution and management of schemes will lead to fewer losses of investment because systems will more likely be culturally accepted, supported and used. Many project and research accounts contain evidence that an active involvement of women has proved to have a beneficial impact on maintenance and functioning of water supply services while at the same time leading to better use and hygiene[32].

In recent years a host of publications has occurred and a large number of practical methods been developed on gender in rural water supply projects[33 34 35].

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[32] Women, Water and Sanitation - A Summary Document 1993 - IRC, PROWESS/UNDP-WB, NORAD

[33] Gender in Community Water Supply, Sanitation and Water Resource Protection - IRC Occasional Paper Series 23 - Christine van Wijk - Sijbesma, The Hague, 1995

Box 3. shows a checklist of issues to be address in a gender-sensitive approach.

Box 3. Checklist for a gender-sensitive approach in drinking water supply projects[36]

1. **Information.** Make sure, by using suitable communication channels and methods, that project information reaches both men and women. In data collection and analysis distinguish between information from men and women.
2. **Gender Division.** Assess with men and women what work and responsibilities they have in land and water use, care of traditional water sources, construction, care and upkeep of houshold latrines, family health and hygiene, communication with other men and women, etc.
3. **Meetings.** Facilitate women's participation in meetings. Time and place suitable for women, women informed and encouraged to attend, seating and language arranged such that all can hear and react. Arrange for that women can react in a mixed or separate meeting.
4. **Planning.** Give men and women a say in and achieve acceptable solutions on : design and location of the facilities, choice of local maintenance and management system, choice of committee members, mechanics, caretakers, health promoters, local financing system.
5. **Committees.** Determine (possibly by law) that a minimal proportion of committees is female. Enable men and women to choose their own representatives on trust and suitability for tasks. Higher committees should include men as well as women.
6. **Hygiene Education.** Involve women as planners and change agents, not as passive audiences. Involve men for issues concerning them.
7. **Training.** Make sure that men and women are trained for technical as well as managerial tasks. Adapt training provisions to the requirements of women (place, methods, literacy level).
8. **Means.** Ensurethat credit, materials and skills are available to men and women, to make their own improvements in water supply, sanitation and hygiene. Where feasible and relevant, undertake or link up with income generating projects.
9. **Gender-Sensitiveness.** Make project staff and management aware why gender is important and how a gender-sensitive approach is applied.
10. **Staffing.** Employ female staff and equip them and male staff for dealing with gender issues.

Multi-Sectoral Approach to Community Development

For practical reasons the community development component of a rural water supply project is often organized sector-specifically within the framework of the project-implementing support agency. However, in many situations a more integrated and multi-sectoral approach towards the community development process may be possible and desirable. In general it can be said that in rural areas a community development scenario of some sort is not only a part of water supply projects, but also of projects and programmes in the sectors of Health (primary health care), Education (community financing and support to rural schools) and Agriculture (rural agricultural extension and information services). Although each of these sectors approaches the concept of community development from its own angle and with specific targets, collaboration and concerted action should be considered in appropriate cases. It can be argued that it may be more efficient in some cases to make use of the extension services or community organizations of one of the other sectors to promote community management of an improved water supply service, especially in cases where one of those other sectors already has a strong local presence in the community. In cases where community organizations are emergent or non-existent, as is often the case in the rural areas of Mozambique, an integrated approach, in close collaboration with the other sectors mentioned, may be possible, resulting in a stronger and multi-sectoral community development process.

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[34] Water Supply - Vijita Fernando - Energy and Environment Technology Source Books - Intermediate Technology Publications with UNIFEM and IRC - London, 1996

[35] Working with Women and Men on Water and Sanitation - An African Field Guide - IRC Occasional Paper Series 25 - The Hague, 1994

[36] Adapted from : Women, Water and Sanitation - A Summary Document 1993 - IRC, PROWESS/UNDP-WB, NORAD - page 27

2.5 The Importance of Cost-Sharing and Cost Recovery[37]

It seems to have become customary, in dealing with the economics of water in developing countries, to regard water as an "economic good". Treating water as an economic good suggests that market principles should be used in its allocation and pricing, much like any other commodity. However, water is arguably a public good with considerable externatilities for public health. It needs to be managed by governments, communities and the private sector together as a "resource". To state that "water is an economic resource" is intended to convey that : (1) water is a limited resource which entails a cost for provision, (2) water resource use and management should be inter-temporal, which would suggest due attention to environmental factors, and (3) water resource allocation should be equitable, assuring provision to the poor, with a first call for drinking water supply.[38] In order to avoid misunderstandings about the market status of water, it is often stated that water is "an economic and social good". In general it can be said that a holistic approach should be adopted towards water, as well as other main components of the natural environment, rather than a reductionist approach.

In designing policies towards charging for water supply in developing countries, it must be recognized that [39]:

1. subsidies will remain important for investment costs, particularly in alleviating the burden on the rural and peri-urban poor and to initiate the programmes with catalytic support;
2. on the basis of the demand driven approach, it is essential to pursue to increase the cost-sharing of the construction cost of rural water systems and to realize full cost recovery of the operation and maintenance cost of the water supply service;
3. the matter of future investment for substitution, rehabilitation or upgrading of the water supply service must be addressed.

Subsidies

Subsidies are justifiable when the construction cost of water systems is such that the beneficiary community cannot reasonably be expected to carry those, or when the running costs of a service are such that the monthly contribution of the beneficiaries would surpass a maximum percentage of the family income, usually set at 3 - 5% [40].

Subsidies for the construction of water systems are given in cash - capital contribution towards the realization of the system - but also in kind - the setting up of a project organization and the government administrative system that support the implementation of a project. These subsidies will arguably remain important especially in rural water supply.

Subsidies for the recurrent cost of expensive rural systems and even for the capital cost in some instances, can also be realized through intra-sectoral cross-subsidization. In some countries experiences exist with cross-subsidization from the urban to the peri-urban or rural beneficiaries (geographical cross-subsidization), or from the users of higher service levels to the users of lower service levels. Nevertheless, the desirability of subsidies for recurrent cost is debatable.

Box 4. gives an interesting example from South Africa of cross-subsidization on the basis of an integrated basin-wide water resources management approach.

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[37] Note in this context that the term "cost sharing" is used with respect to beneficiaries' contribution to the investment cost of a rural water supply system, and that the term "cost recovery" is used for recurrent costs

[38] A model of Costs and Resources for Rural and Peri-Urban Water Supply and Sanitation in the 1990s - Ashok Nigam, Gourisankar Ghosh - UNICEF, March 1995 - page 9

[39] Adapted from : A model of Costs and Resources for Rural and Peri-Urban Water Supply and Sanitation in the 1990s - Ashok Nigam, Gourisankar Ghosh - UNICEF, March 1995 - page 9-10

[40] Paying the Piper - An Overview of Community Financing of Water and Sanitation - IRC Occasional Paper Series 18 - Edited by Phil Evans - The Hague, 1992 - page 19

Box 4.

Umgeni Water, South Africa - Interdependence in the provision of rural and urban services[41]

Umgeni Water, the largest water board in the province of Natal, South Africa, takes a long term view in the provision of water supply to a catchment of 24,000 km^2 and a population of 5.5 million people: 1.5 million rural and 4.0 million urban, informal and transitional settlements with a projected population increase to 13 million in 2030. Almost eight years ago, Umgeni Water took a bold decision to invest in rural and peri-urban water supply and sanitation. With modest investments in the early years, the investment in these areas increased almost four fold in the last financial year. There were clearly sound economic reasons for this investment illustrating the interdependence in this catchment which contributes approximately 20 percent of the South African GNP.

Development and growth is putting water resources under stress. The Water Board identified a major source of pollution to be from the discharge of raw and treated sewage into the basin resulting from increasing urbanization and informal settlements. In addition, soil erosion in the headwaters is causing increasing silt loads in rivers and reservoirs. As a result, the cost of water to urban users is increasing due to expensive treatment processes. Service expansion to rural areas could, therefore, be justified on economic and environmental criteria, indicating how water supply to urban areas must take account of the overall management of the river basin and environmental considerations both upstream and downstream.

Umgeni Water is demonstrating that services can be provided jointly to rural and peri-urban areas within its catchment area in a cost-effective manner, with full cost recovery for the operations and maintenance cost but with a non-stifling cross-subsidy from the urban to rural areas for the capital cost. The charges for providing rural and urban water supply is estimated at R1.36/m^2 and R1.85/m^2 respectively. The latter includes a capital subsidy for the rural areas of 2.35 cents. Apart from a connection charge of R200 to R280 for household connections in the rural areas, the capital cost of rural water supply is being recovered over a 20 year period. The excellent cost recovery record in urban areas and the relative affluence of the urban districts of Durban and Pietermaritzburg have provided the board with a "cash cow" but this has been managed judiciously, spreading the benefits from economies of scale. Umgeni Water Board is a parastatal which receives no subsidies but issues its own bonds which have a triple A rating on the capital market.

The board has an excellent record of cost recovery in rural areas and has contributed to employment creation in the catchment area. This was achieved by :

- the provision of services which the community is willing and able to pay for;
- providing services only after the community is mobilized : the community forms a local water committee which approaches the board and agrees to manage the project - the utility bills each consumer for the household connections and the community for the standposts, the local water committee undertakes collection and banks the receipts;
- keeping cost of service delivery low through the use of local committees for the administration of the rural schemes. The community employs a cashier whose salary is partly contributed by the board;
- community development training in negotiating skills, water management and hygiene is promoted by the Board through rural planning officers employed and paid by the Board. Their work includes promotion of sanitation through low-cost but acceptable pit latrines (VIPs or the Phungalutho);
- employment of local people during the construction of the pipelines and the promotion of local businesses and artisans for the supply of materials, including their training.

[41] A model of Costs and Resources for Rural and Peri-Urban Water Supply and Sanitation in the 1990s - Ashok Nigam, Gourisankar Ghosh - UNICEF, March 1995

Cost-Sharing and Cost Recovery

There are two main reasons why cost-sharing and cost recovery are essential. First of all the mobilization of community resources will decrease the pressure on the available budgets from the government (and donors). It has been argued that together with significant and possible cost-reduction measures, considerable financial resources would be freed that could be reinvested in the sector, thus increasing coverage on a sustainable basis[42] [43].

The second reason why cost-sharing and cost recovery are essential lies in the demand driven approach to the provision of rural water supply services. Water supply services should be provided on real demand. Demand implies willingness to pay and is concretized in the actual payment for water supply services. Making people pay for their water supply at the end of the day empowers them to make their own choices and define their own priorities. Furthermore, and derived from this central principle, payment for water supply services encourages cost-effectiveness and the development of low-cost solutions and increases the sense of value and commitment among users, thereby contributing to the sustainability of the water supply service[44].

When demand is real, that is, willingness to pay a realistic price is clearly demonstrated by the community, there can be scope for alternative ways of community financing of improved water supply services. Apart from contributions in kind, such as labour, contributions towards the capital cost of an improved scheme can be made through microfinance, also called microcredit. This is a system in which credit for specific purposes is extended to relatively poor households that often cannot provide collateral, which is normally a condition for the extension of credit. Experience has been gained in many countries in recent years with microcredit schemes for improved water supply services, predominantly in peri-urban but also in rural areas [45] [46].

The Use of Credit

Box 5. gives an interesting example from Bangladesh of how credit can successfully be extended to poor rural families for the improvement of their water supply.

As for the ways in which cost recovery for operation and maintenance can take place, reference is made to the extensive literature on this subject, some of which is summarized in "Paying the Piper - An Overview of Community Financing of Water and Sanitation - IRC Occasional Paper Series 18 - Edited by Phil Evans - The Hague, 1992".

Finally, it can be concluded from the above examples that, although it is obvious that the choice of service level and technology by the community basically depends upon the available (financial) resources, that the availability of alternative and adequate financing mechanisms can significantly influence these choices, for the better.

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[42] A model of Costs and Resources for Rural and Peri-Urban Water Supply and Sanitation in the 1990s - Ashok Nigam, Gourisankar Ghosh - UNICEF, March 1995 - chapters 2 and 3

[43] Paying the Piper - An Overview of Community Financing of Water and Sanitation - IRC Occasional Paper Series 18 - Edited by Phil Evans - The Hague, 1992 - chapter 2

[44] Paying the Piper - An Overview of Community Financing of Water and Sanitation - IRC Occasional Paper Series 18 - Edited by Phil Evans - The Hague, 1992 - page 3

[45] A model of Costs and Resources for Rural and Peri-Urban Water Supply and Sanitation in the 1990s - Ashok Nigam, Gourisankar Ghosh - UNICEF, March 1995 - page 11

[46] Financial Services and Environmental Health - Household Credit for Water and Sanitation - Robert C.G. Varley - Environmental Health Project - Arlington, VA, January 1995

Box 5.

Bangladesh - Grameen Bank financing for rural water supply and sanitation[47]

The Grameen Bank in Bangladesh is well known as a provider of credit to some two million of the poor and landless in Bangladesh, mainly women. The bank is also a successful example of extending credit for rural water supply and sanitation. The banks significant innovation is to organize people into groups of five, and ask each person to guarantee the repayment of a loan to any of the other four members. The security provided to the bank is in the form of collective collateral, relying on peer pressure and close supervision by the bank. The leader of each group has weekly review meetings with a staff member of the bank.

The bank is financing rural water supply and sanitation in Bangladesh. In 1992, it provided USD 5.7 million in loans for tubewells and sanitary latrines which more than tripled to USD 18 million in 1993, 9 percent of which was for sanitary latrines. The interest rate charged on loans for tubewells is 20 percent while for sanitary slabs and rings it is 8 percent, repayable over 2 years. Repayments are made in weekly installments of 1 percent of total disbursement. All Grameen Bank members are eligible, although in the case of loans for sanitary latrines, a member normally needs to be a second time borrower. The loan amount for tubewells is about USD 125 individually (USD 250 jointly); and USD 18 for sanitary latrines bought from the Grameen Bank manufacturing units (USD 12 if procured elsewhere due to difference in quality). Since March of 1992, the Grameen Bank has provided loans for about 70,000 suction tubewells.

The handpumps and latrine parts are procured locally by the borrowers. The bank also has units for manufacturing sanitary slabs and rings which are provided to borrowers at affordable prices. The borrowers can also procure these supplies from the Public Health Engineering Offices and local private manufacturers.

The Grameen Bank systems shows how a high degree of community level participation can be effectively combined with financing mechanisms to expand coverage. The community, in particular women, (since the two million members of the bank are mainly women) is not only the decision-maker but their willingness to borrow results in an effective demand for the services. In UNICEF supported tubewell installations, it is estamated that the community contributes about 45 percent of the total capital costs; and about 93 percent of the installation cost of sanitary latrines. Community participation must be suported with adequate financing mechanisms if rural water supply and sanitation coverage is to be expanded.

[47] A model of Costs and Resources for Rural and Peri-Urban Water Supply and Sanitation in the 1990s - Ashok Nigam, Gourisankar Ghosh - UNICEF, March 1995

2.6 The Management Phase : Operation and Maintenance of Handpumps and Small Systems

The O&M phase is usually the test for the sustainability of the rural water supply service. It is generally accepted that the functionality of the operation and maintenance of a rural water system that is managed by a community organization depends on a number of key factors[48] :

- an enabling environment in terms of legal provisions, regulations, education, information
- felt need and health awareness
- strong institutions, at community level as well as with the project-implementing support agency and government
- supportive attitudes from the involved institutions
- expertise and skills in O&M with the involved institutions (including the private sector)
- appropriate service level of the water supply
- appropriate technology
- availability of materials and equipment
- availability of support services
- financial matters, such as willingness to pay, affordability, effective cost recovery mechanisms

Other descriptions of the key elements of the sustainability of O&M are also given in the literature[49]. The sustainability of O&M as a function of the available capacity at community level has been presented in section 2.3 [50]. These other descriptions are largely overlapping with the above elements.

It is obvious from this list that a rural water supply service that has been realized in a properly and legally decentralized system, on the basis of a demand driven project approach and in which the planning and construction of the system have been part of a well defined gender sensitive community development programme, will in principle contain all of the above elements already, apart from the availability of spare parts, materials and equipment and the availability of support services. The availability of spare parts, materials and other support services are essential to the successful functioning of the O&M sytem though. In many situations, the rendering of these support services is best left to the private sector. Nevertheless, it depends very much on the capacity in the private sector itself whether or not these support services can be rendered effectively and efficiently. Where the private sector is weak or not well developed, government institutions may continue to have an important role in the distribution of spare parts or the rendering of support services for the time being[51]. This very much depends on the local situation.

Although the successful implementation of community management depends for a large part on the right approach during the pre-planning, planning and construction phase, it will be necessary to give adequate training to the members of the community organization managing the water supply service, to the O&M group within that committee and to the caretakers of the waterpoints. Not only must adequate training be given, also monitoring of the functioning of the service and possibly follow-up support (e.g. training) from the project-implementing support agency will be necessary. This report does not deal with the project components of monitoring and follow-up support. Further considerations regarding the development of an O&M system can be found in literature[52].

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[48] Making your Water Supply Work - Operation and Maintenance of Small Water Supply Systems - IRC Occasional Paper Series 29 - Brikké, François; et al. - The Hague, 1995

[49] Models of Management Systems for the Operation and Maintenance of Rural Water Supply and Sanitation Facilities - WASH Technical Report no. 71 - Arlington, February 1993

[50] Capacity Building for Water Supply and Sanitation Development at Local Level - The Threshold Concept - Len Abrams - presented at the UNDP Symposium on Water Sector Capacity Building - December 1996

[51] Models of Management Systems for the Operation and Maintenance of Rural Water Supply and Sanitation Facilities - WASH Technical Report no. 71 - Arlington, February 1993

[52] Making your Water Supply Work - Operation and Maintenance of Small Water Supply Systems - IRC Occasional Paper Series 29 - Brikké, François; et al. - The Hague, 1995 - chapters 6,7

2.7 The Role of the Private Sector

Support Services

The involvement of the private sector in the provision of support services to the community managed rural water supply service is widely accepted. Such support services include the contracting out of specialized construction work such as borehole drilling and pump installation during the construction phase of the system. In the management phase the private sector may provide technical services such as repairs, supply of spare parts and other materials, but also very menial services such as photocopying, transport or even electricity supply. The level of services that can be provided by the private sector depends very much on the development of the sector itself, and thus on local circumstances. In general it can be said that such technical services are best provided by the private sector, but where the sector is not sufficiently developed, that government organizations will often still have a role.

Private Sector Participation in the Management of Rural Water Supply Services

The role of the private sector may go much further than the provision of support services. Private Sector Participation, or as it is also called Public-Private Partnership, in the management of water supply services has been a reality in many countries around the world and in the last 5 to 10 years also in Africa. In Mozambique, private sector participation is being considered now for implementation on the short term. Nevertheless, the large majority of experiences of private sector participation in management, that can be found in literature, are cases of urban water supply. Experiences with private management of rural water supply services, ususally small piped systems, are less well documented in the literature.

Key factors for the successfull application of a private sector participation, no matter what the exact institutional arrangements between the public and the private sector are in a given case, are given in Box 6.

Box 6. : Key factors of private sector participation[53] :

- **A**pproach - a business approach to operations, characterized by the profit objective, strategy, cost-consciousness and efficiency
- **B**ehaviour - attitudes towards business, client-orientedness, initiative, state of mind
- **C**apacity - the capacity (technical, managerial, financial, administrative, etc.) to perform the required service professionally
- **D**emand - willingness to pay from the clients and commercial pricing of services
- **E**nvironment - legal and institutional framework enabling for private sector participation, banking facilities, political support for p.s.p., etc.

One of the options for the institutional arrangement is that of the local government (e.g. municipality) or community based organization as owner of the system with the management of services, such as operation and maintenance and/or accounting, billing and collection of payments, to the private sector[54]. This option is under study in Mozambique[55] and South Africa[56].

[53] François Brikké, 1997

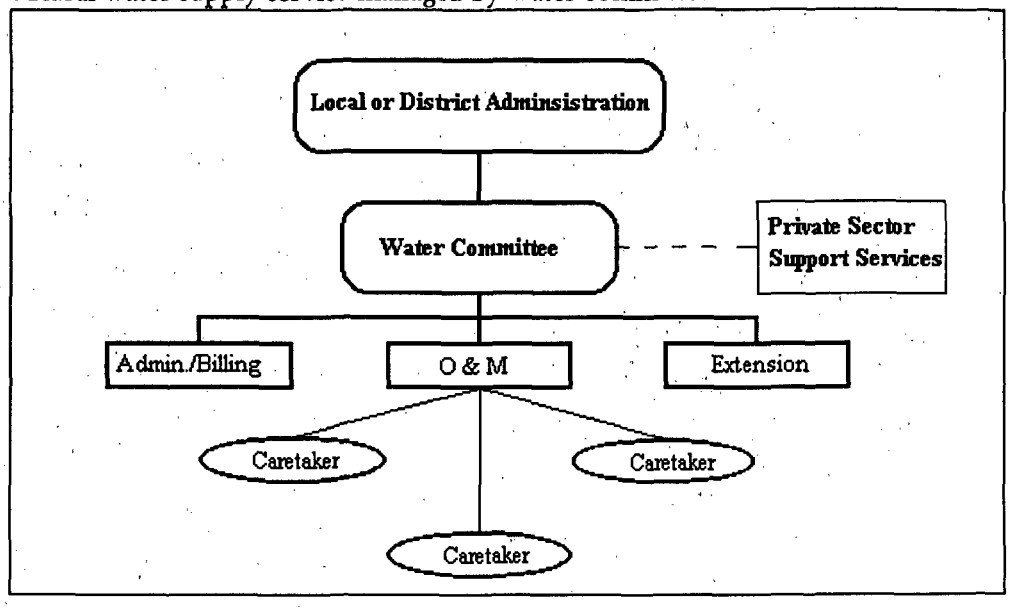
[54] Policy on Private Water Sales in Rural Ghana - Boadu, Fred. O. - in : Journal of Water Resources Planning and Management, vol. 120, no. 6, November/December 1994

[55] Operation and Maintenance of Rural Water Supply in Mozambique - Draft Report of Formulation Mission - François Brikke, IRC - The Hague, July 1997 - section 3.2.2.

[56] Mr. Martin Rall, The Mvula Trust, South Africa - Personal Communication

One option for community management by a water committee through a local administration (e.g. municipality) without involvement of the pritate is presented in figure 5. The kind of relation between the local administration and the water committee depends on the legal and institutional framework in which the management of rural water supply services functions, especially on the legal status of the water committee.

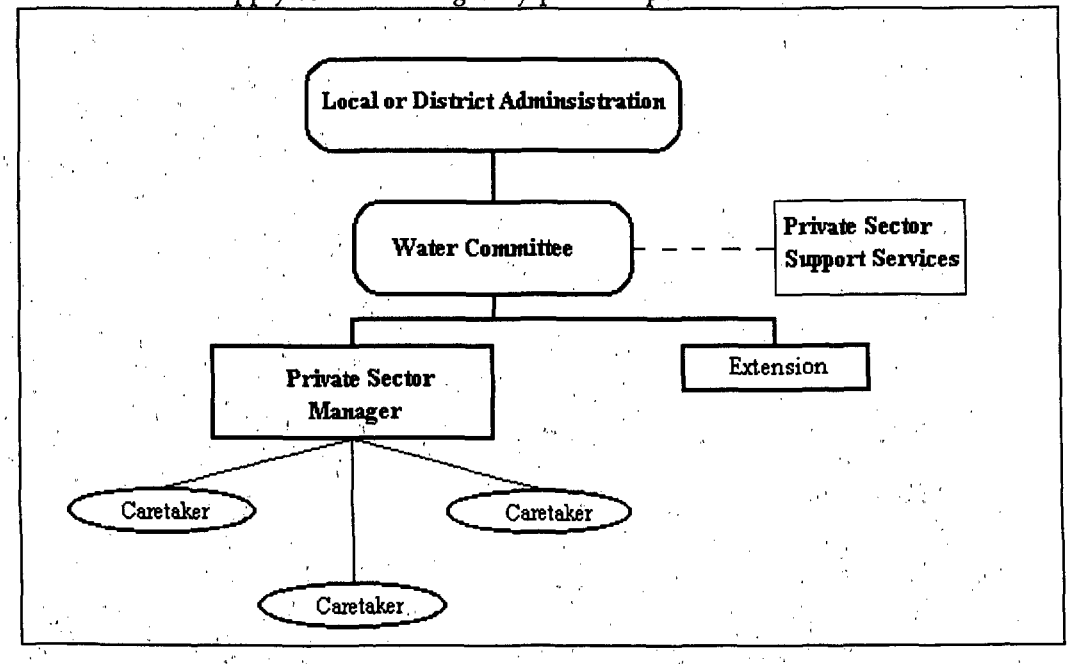
Figure 5 : Rural water supply service managed by water committee



The different operational branches of the Water Committee that secure the management of the water supply system can also be taken care of by private sector operators. This is clear for the Operation and Maintenance part, in which very often private operators already provide support services such as repairs or maintenance. But it is also possible to leave the whole of the management, possibly including even the extension services, to a private operator.

Figure 6 shows one of the possibilities for involvement of the private sector in the management of a rural water supply service.

Figure 6 : Rural water supply service managed by private operator



The involvement of the local or district administration as an asset holding vehicle is often desirable or even necessary when the legal framework of the country does not (or not yet) allow for the Water Committee to have legal status. In Mozambique a process of reform is underway that will lead to the establishment of elected local government. In such a system provision could be made for an elected local Water Committee, with legal status, as well.

The involvement of the private sector manager is governed by a contract between the Water Committee and the company providing the management services. In cases where the Water Committee does not have legal status or does not own the water supply system, the contract could celebrated between the legal owner, such as the local government, and the Water Committee can for instance be the legal representative of the local government. This contract must be drawn up very carefully and should contain the clear description of the division of responsibilities between the parties involved. Crucial issues in such a management contract are the pricing of water sold and the further regulation of the privately managed service.

Although private sector participation in the management of rural water supply services is a promising option, it needs further study before it can successfully be implemented in Mozambique.

2.8 The Role of Non-Governmental Organizations

Local or regional NGOs can sometimes play a pivotal role in catalyzing and facilitating the community development process. Project-implementing support agencies often make use of their services. Their potential importance lies in the involvement they already have with the communities in an area. If such a community based organization exists, the project-implementing support agency need not allocate its own resources to the mobilization of the community and cooperate with the existing organization. Also in cases where local organizations are not yet existent in certain target communities, national or regional NGOs are often better equipped to implement a process of community mobilization leading to the creation of community-based organizations and water committees.

In many cases local or regional NGOs continue their links with water committees once they have been formed. Fruitful cooperation in the areas of training and community education, or the full range of extension services, is often possible.

In general it can be said that project-implementing support agencies can successfully cooperate with local and/or regional NGOs, benefitting from their specific knowledge and experience in the community development process and their long term presence in the communities.

2.9 Creating an Enabling Environment II: Capacity Building at All Levels

As stated in chapter 1, the successful implementation and sustainability of rural water supply services to a large extent depends on the availability of capacity. Capacity is needed at community, district, provincial/regional and central level, as well as in the private sector and non-governmental organizations, to successfully inplement a rural water supply project, whereas the types of capacity needed at the different levels also differ. Different types of capacity are also needed in different phases of the project cycle, such as in the planning phase, the construction phase and the operation and maintenance phase.

The following activities(discussed in this document) can only be successful if adequate capacity for their implementation is developed:

- the decentralization of government in general,
- the decentralization of management responsibility of rural water services to the community,
- the decentralization of project implementation away from central level,
- the implementation of a demand driven planning approach,
- the implementation of an integrated approach towards community development,
- the implementation of adequate cost recovery systems,
- the execution of adequate operation and maintenance by the beneficiaries,
- the involvement of the private sector in all aspects of rural water supply services,
- the involvement of local government in the management of rural water supply services

will not be successful unless sufficient capacity is created at all the different levels to assume the responsibilities assigned to them.

Building and maintaining capacity at all levels, including private sector and NGOs will be necessary if rural water supply services are to become sustainable. It is one of the points that the author of this paper wants to make that the introduction of community management in Mozambique will not be successful and the sustainability of rural water supply services not attainable if the implementation of the approaches and strategies presented in this chapter are not accompanied by a major effort to build the relevant capacity at the different levels.

It should be noted that the term capacity building is commonly misconceived as merely the building of skills and abilities. It is much more though. Capacity building is the process whereby an organization is equipped, or equips itself, to undertake the necessary functions of governance and service provision in a sustainable fashion. The process of capacity building, apart from the creation of skills and abilities through training, must be aimed at both increasing access to resources and to changing the power relationships between the parties involved, with the view of creating a position from which the acquired skills and abilities can be used adequately. Capacity building programmes therefore often contain elements of human resources development, institutional strengthening as well as other elements that aim at creating an enabling environment for the organization. The "organization", in this context, may be a local government, a village level committee or even a central government department. Capacity building is not constrained to officials and technicians, but must also include the general awareness of the local population regarding their services and development in general[57].

Chapter 3 will explore in more detail what the consequences of the implementation of the strategies and approaches, described in this chapter, in the case of Mozambique will be and how the proposed capacity building effort can take place.

[57] Adapted from : Capacity Building for Water Supply and Sanitation Development at Local Level - The Threshold Concept - Len Abrams - UNDP Symposium on Water Sector Capacity Building - December 1996

3. Implementing Community Management in Mozambique

3.1 General Considerations

Chapters 1 and 2 of this report presented a general framework for the development of community management of rural water supply services on the basis of experiences and recent developments. The way this framework is used in any country will depend very much on the local situation, especially the institutional environment in which community management will have to function. This chapter will present some considerations for the implementation of community management of rural water supply services in Mozambique. By the nature of this report these will be general and not geared towards specific situations in the country. Neither will the presentation in this chapter be complete or try to be so.

Based upon the existing legal and institutional framework and the reality of rural water supply in the country, key issues will be presented and discussed. The roles and tasks of the different actors in the sector will be discussed under the assumption that the project-implementing support agency is a temporary organization, created for instance by a consultancy company, for the duration of the project.

Furthermore it is assumed that the policy for the implementation of community management of rural water supply services will already have been adopted at national policy level as a logical consequence of the more broadly formulated National Water Policy.

3.2 Legal and Institutional Framework

Organization of the Rural Water Sector

Water supply systems are owned by the State. The State is represented by governmental organizations at central level such as the Ministry of Public Works and Housing (MOPH) and the National Directorate of Water (DNA) subordinated to it. MOPH then has deconcentrated Provincial Directorates of Public Works and Housing (DPOPH) in which a Water Department (DA) is functioning. DPOPH and specifically the DA have a coordinating relationship to DNA and are not directly subordinated to DNA. At district level there is the District Directorate of Public Works and Housing (DDOPH) which is subordinated to the District Administration and has a coordinating relationship to the DPOPH. In general, subordination lines follow the framework of the State administration (district government to provincial government to central government) The sectoral organizations, although being part of those different levels of government, are not directly subordinated to eachother. Thus the final responsibility for a public rural water system lies with the MOPH who delegates this responsibility to DNA. As a result, decisions about investment or other relevant issues for water systems are taken at central level.

Institutional Reform

In order for community management to be successfully implemented, it seems imperative to decentralize the ownership of and responsibility for the water systems. The process for this to happen has already been started by the Ministry of State Administration (MAE). The system of government of the country will be changed from deconcentrated to devolved, through the creation of local government circles or municipalities ("autarquias") that are elected. The provision of basic services, including water supply, will become the responsibility of those local governments.

Nevertheless the local government reform programme will be implemented in phases and it will take a considerable time before all of the rural areas will be reached. An intermediate solution may be desirable. If community management is to be developed successfully in Mozambique, local institutions must legally beable to assume responsibility for the water supply service.

Delegated Responsibility

The matter of the legal status of the Water Commitee would be clarified if the Water Committee would function under the responsibility of the District Administration. In this arrangement, higher levels of government would delegate the responsibility to manage the water supply systems to the District Administration, who can then nominate, possibly after an informal election process, a Water Committee in each community. These Water Committees could receive a certain level of autonomy from the District Administration to manage and administrate their system. To be emphasized that the realization of this model will depend upon the political will at various levels to delegate powers to lower levels.

One disadvantage of the system of delegated responsibility is that the Water Committee will not have legal status of its own, i.e. the legal right to assume responsibility that is needed for instance to enter into a contract with a private sector entity. This legal status would lie with the District Administration, who could be a contract party in such cases. Water Committees can only have full legal status if they are registered as private voluntary organizations (PVOs), also called NGOs. Nevertheless, a Water Committee that is registered as an NGO will not have the legal ownership over the water supply system in the community, thus complicating its effectiveness in creating a community managed service.

For further development of the introduction of community management of rural water supply services in Mozambique in this chapter, it is assumed that the institutional arrangement of figure 5 (page 22) is valid.

3.3 Community Level

The greatest challenge of the implementation of community management of rural water supply services lies in the community development process that will have to take place before Water Committees, representing the communities, can assume management responsibility.

There are a number of specifically Mozambican key factors that influence the community development process. Most important factors are (1) the historical dependancy of the population on "higher levels", either the colonial or national governments before respectively, after National Independence, and (2) the fact that many rural communities have been recently reestablished after the war that ravaged the country until 1992.

Education and Mobilization Programmes

There is no doubt that in most rural areas of Mozambique a viable community development process can only be expected to start after large scale education and mobilization programmes in target areas. Such programmes, which could involve social marketing through radio and other means, should concentrate on the areas of (1) the importance of improved water supply and (2) the own responsibility of the communities. Only after the completion of such education and mobilization programmes, can communities be expected to be able to express demand for improved water supply systems. The design and implementation of such education and mobiliation programmes will be the responsibility of the project-implementing support organization. Participatory baseline surveys and appraisals, in order to diagnose the level of development of the different communities and target areas will be necessary. One of the most important elements of these programmes in a later stage will also be a participatory needs assessment with the communities. At an appropriate point in time during the education and moblization programmes, information must be supplied to the community of the possibilities of realizing improved rural water supply services through the project and the rules on the basis of which assistance can be given to the community to realize such an improved service.

Taking into account that the effective dissemination of information to, and communication with, individuals and their communities, could be a key element to successfully applying a demand driven approach for the improvement of rural water supply in a certain target area, it seems to be necessary to create a presence of extension work (PEC - Participação e Educação da Comunidade) in the communities of the target area. It is believed that the effectiveness of such a PEC presence in communities can greatly facilitate the community development process and create the conditions for successfully applying a demand driven project approach.

It is recommended that in designing the education and mobilization programmes, close cooperation is sought with the other sectoral agencies working at community level, such as Health, Education and Agriculture, to see if integration of activities to realize a more far-reaching and inclusive programme to stimulate community development is possible. It is equally recommended that in the process of designing education and mobilization programmes cooperation is sought with Mozambican Non-Governmental Organizations who have a presence in the target areas.

Formation of Water Committee

One of the outcomes of the community development process should be the formation of a Water Committee. After the education and mobilization programmes have been finished there should be a clear understanding in the community of what actions need to be taken to come to the realization of an improved water supply service. The formation of a Water committee is one of the first. The District Administration will have a facilitating role in stimulating and guiding the election or selection process of the Water Committee. Once the Water Committee is formed, it should examine the criteria for eligibility of the project-implementing support agency and enter into a

process of discussion with both the community and the project-implementing support agency on how to become eligible for inclusion in the project. The establishment of a community fund, the preparation of a letter of interest, or organization of in kind contributions may be part of this process, depending on the specific project-defined requirements.

Capacity Building at Community Level

Once the Water Committee has been formed, the project-implementing support agency should survey the existing capacity at the community level for managing the water supply service. The different element of the minimum necessary capacity were presented in section 2.8. On the basis of this baseline capacity survey a capacity building programme can be designed that can be implemented during the time of the planning and construction phases of the water supply system. In most cases, specific training for different elements of the required capacity will be needed such as administration, accounting, billing, organizing and leading meetings, maintenance, etc.

Box 7. lists preconditions for the successful implementation of community management[58], many of which are related to the formation of Water Committees at local level :

Box 7. Preconditions for community management

- There must be community demand for the improved water supply service
- 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 services
- The community must understand its options and be willing to take responsibility for the service
- 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 service
- 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 made available from governments, donors, and the private sector (training, technical advice, credit, construction, contractors, spare parts provision, etc.)

[58] Making your Water Supply Work - Operation and Maintenance of Small Water Supply Systems - IRC Occasional Paper Series 29 - Brikké, François; et al. - The Hague, 1995 - page 65

3.4 District Level

The District Director of Public Works and Housing (DDOPH), who is a member of the District Administration, will play a facilitating role in the mobilization of the communities and the organization of the Water Committees in the District. Taking into consideration the limited level of education and professionality as well as the extremely limited means that the District Administrations in general and the DDOPH in particular usually suffer from, a capacity building and mobilization campaign at this level will be appropriate. This capacity building programme should prepare the DDOPH and other involved parties at district level for their role in the community development process at local level. The programme should provide training, as well as the minimum resources necessary for the execution of the tasks assigned.

One of the first activities in the target area, to be realized before any activities at community level are started, would be the realization of a workshop in which all key elements of the District Administration participate and that (1) presents the outlines of the project approach for the implementation of community management of rural water supply services and (2) highlights the roles and responsibilities of the different actors, including at higher levels and of the private sector and NGOs, and those of the District Administration,and the DDOPH in particular.

It is also at district level that a concerted and inter-sectoral approach towards the community development process should be coordinated. Each sector will have its district representatives, just like the DDOPH, who are part of the District Administration. Planning for concerted action at community level takes place therefore in the District Administration. Concerted and inter-sectoral action will increase the need for a capacity building programme at district level, which will then include the various sectors.

3.5 Provincial Level

The Water Department (DA) of the DPOPH will have to play a key role in (1) mobilizing the Districts and in facilitating the capacity building processes at district and community level, and (2) coordination with the project-implementing support agency.

In order for the DA to be able to do so, a capacity building programme at provincial level will be necessary. After a mobilization and information workshop, the new roles of the DA in relation to all actors in the provision of rural water supply services will have to be further defined and the facilitating and coordinating capacity of the DA increased. Training programmes can be designed at provincial level to prepare the personnel at district level for its new roles.

Nevertheless it must be emphasized that also here, capacity building will have to include much more than training. Access to resources such as transport, finance, computerized systems of administration and control, technical and organizational know-how, etc. are maybe even more important than training only.

Strategic planning and coordination of concerted action with other sectors (Health, Education, Agriculture) at district and community level, will have to take place at provincial level. The new approach in the provision of rural water supply services should be equally transmitted to those sectors therefore, and where concerted action seems possible, the capacity building programme should also include the participating sectors.

The mobilization and capacity building at provincial level should ideally preceed the activities at district level.

3.6 Central Level

In the devolved system of government, the central level, concretely in Mozambique the National Rural Water Supply Programme (PRONAR) of DNA, will no longer be responsible for the direct implementation of rural water supply projects and programmes. It's role will be shifted towards strategic planning and coordination, monitoring, policy-formulation, standardization, and other facilitating tasks such as coordination with donors and promotion of funding and funding mechanisms, etc.

Nevertheless, before this new situation is reached, central level would also have an important role to play in :

1. the process of defining the mentioned temporary institutional solution of delegated responsibility, before the elected local government circles are in place and have the ability to take responsibility for rural water supply services,
2. the mobilization of, and promotion of capacity building at, provincial and possibly district levels and the information dissemination necessary to start implementing the new demand driven project approach, and
3. the definition of a framework in which the project-implementing support agencies will have to work, like for instance a standardized project approach.

A capacity building programme in PRONAR would be necessary in order to prepare the organization for its new roles, not only in the long term but also in the very short term. Detailed proposals for capacity building have been made recently by several authors. Reference is made to the relevant reports[59] [60].

[59] Study of the Institutional Arrangements for the Provision of Rural Water Supply and Sanitation Services in Mozambique - Cowater International - Ottawa, Ontario, Canada, 1997

[60] Operation and Maintenance of Rural Water Supply in Mozambique - Draft Report of Formulation Mission - François Brikke, IRC - The Hague, July 1997

3.7 The private sector

Due to, amongst other factors, the political and economical climate after National Independance in 1975 and until the beginning of the 1990s, the private sector has not developed itself vigourously in Mozambique. This holds true for virtually all parts of the private sector of the economy except for the small scale retail business in urban as well as rural areas ("comerciantes"). In all rural and all but the largest urban centers, even the simplest technical support services such as plumming, motor repair, low-tech contracting, etc. are absent in the formal private sector and sometimes available in the informal private sector. This phenomenon could seriously hamper the provision of support services to communities who are managing their own water supply services.

In order to remediate this situation a two-way approach is advocated. On the shortest term, when project-implementing support agencies start operating and a need of technical services arises, the government sector, represented in the Provincial Rural Water Supply Workshops or EPAR, could be used to provide the needed services. The status of the EPARs is at present under discussion. They may be disattached from DNA/PRONAR and be transformed into public utilities, but no clarity exists on this point. In the meantime, and parallel to the use of EPARs services, it is recommended that the development of capacity in the private sector for the provision of support services to rural water supply schemes be made an objective of the project-implementing support agency's programme in a given target area. The spreading of contracts over more than one contractor or support services provider would be recommendable and the possibility of providing training programmes of which also the private sector could profit should be considered, for instance in the framework of contracts. This could stimulate the development of a capable and independent private sector.

Capacity to independently and successfully manage rural water supply schemes, or to function as project-implementing support agency, is at present not available in the local private sector in Mozambique, to the knowledge of the author of this report. Nevertheless, there are professional Mozambican consultancy companies, most of them based in the capital Maputo, who could most probably develop this capacity on the short to medium term, especially if supported for instance by international consultancy companies. Where it seems appropriate to make use of private sector management of rural water supply services and for the setting up of project-implementing support agencies, the use of a combination of local and international consultants, with the specific objective of capacity building in the former, is recommended.

3.8 Non-Governmental Organizations

Non-Governmental Organizations (NGOs), also known as grassroots organizations to indicate that they operate at the level of communities, can play an important role in the development process of community management of rural water supply services. By their very nature, they are closely linked to the communities and where effectively existent, have often a relationship of confidence with communities. This network in the communities in which the NGO operates can be used by project implementing support agencies to communicate with the target group of beneficiaries in the communities. The role of NGOs is to be seen as an important and complementary one to those of government and the project implementing support agency.

Just like the private sector, the non-government sector is also not well-developed in Mozambique. Until the beginning of the 1990s services and activities that are specific for the non-government sector were also provided by governmental organizations. Grassroots organizations were very often related to the political party in power. It is only since a few years therefore that the development of non-governmental grassroots organizations has started. Even until now, in many parts of the country such organizations are still not existent.

It is to be expected though, that the development of non-governmental or grassroots organizations will be enhanced considerably by the fact that many international private voluntary organizations, political, religious or otherwise motivated, have capacity building programmes in Mozambique for the local NGOs.

Rural water supply programmes, coordinated by project-implementing support agencies, could make it one of their objectives to develop capacity in the NGO sector as well, where possible and appropriate. Contracts for the provision of extension services with local NGOs, that are formulated such as to contain also a capacity building component for the NGO, could stimulate the process of development of a capable and independent Mozambican NGO sector.

The coordinating levels of government could include the collaboration with local NGOs in the policy framework for the implementation of rural water supply projects.

3.9 The donors

At present a large part of the rural water supply projects in Mozambique is funded by the international donor community. Although the economy of the country is growing at a steady pace and economic progress is likely to positively influence the Government's capacity to invest in infrastructure, it must be expected that the contributions from the international donor community in the area of rural water supply will remain essential for a considerable time. At present the most important donors in the rural water sub-sector are UNICEF, DGIS (Dutch Cooperation), SDC (Swiss Cooperation), Irish Cooperation, CIDA (Canadian Cooperation) and the World Bank. It is especially the World Bank that is at this moment strongly advocating the change from the supply driven to the demand driven project approach, that is also presented in this report.

Most important consequence of the introduction of community management of rural water supply services and the change of a supply driven to a demand driven project approach is that the planning of rural water supply projects becomes less straightforward. Previously, it was basically the donor who, in coordination with the Mozambican authorities, decided on how many water sources would be realized in which area and in a given time frame. This allowed for a smooth financial planning for the donor.

In the demand driven approach, the community itself decides whether or not it wants improved water supply and which system it wants at what cost. The disbursement of donor money becomes less easy to plan and will be more spread out in time. The allocation of money by the donor to a highly detailed and worked out rural water supply project proposal therefore becomes more difficult and less appropriate.

Several different approaches exist to funding projects of this nature. However, it is beyond the scope of this report to go into the matter.

On the basis of the above, it may well be necessary for donors to consider their own internal funding mechanisms in the light of the new demand driven project approach, and make provision for the new conditions in which funding will have to take place.

3.10 Other Critical Factors

Even if all actors in the rural water supply sub-sector in Mozambique, including the donors, would accept all the recommendations of this report and of others who have recently published about the same subjects[61], there are still a number of factors that negatively influence the successful implementation of projects and hence the development of sustainable rural water supply services in the country. These factors are related to the general level of development of the country as well as to the macro-economic situation at present. As a result, these factors can only to a low extent be influenced within the sector.

One of the most important factors limiting the effectiveness and the efficiency of the public sector are the very low salary levels. An academic level professional can expect to receive the equivalent of USD 160,– per month and a medium-level technician the equivalent of USD 80,– per month. These amounts are not sufficient for a dignified life for a sector professional in Mozambique. Also they are very much lower (factor 5 to 10) than the salaries paid in the private sector to the same level of professionals. It must be hoped that the Mozambican Government finds ways and means in the near future to remediate this situation and work towards the dignification of the public service.

Another factor negatively influencing the successful implementation of rural water supply projects according to the proposed methodology is the small number of professionals in the sector at all levels, and the low educational level of those at district and sometimes at provincial level. There is a huge need for training and capacity building at all levels of government (not only in the water sector). Mention might be made in this framework of the need of assembling a critical mass of rural water supply expertise in the country, that could be useful in creating the capacity building programmes that are required.

One other factor worth mentioning in the framework of the discussion of rural water supply projects is the general level of development of the rural areas. In general in the rural areas, electrification and telecommunication are totally absent or malfunctioning, quite often even in the District capitals where the District Administration is seated. The use of computer equipment, the buying of fuel, the making of a telephone call are very often impossible without the creation of a project-related logistical supply network. Consequently, the functioning of both the project-implementing support agencies and the Water Committees, can be costly.

[61] for instance : Study of the Institutional Arrangements for the Provision of Rural Water Supply and Sanitation Services in Mozambique - Cowater International - Ottawa, Ontario, Canada, 1997, and : Operation and Maintenance of Rural Water Supply in Mozambique - Draft Report of Formulation Mission - François Brikke, IRC - The Hague, July 1997

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