

Chapter One

Study Focus, Methodology and Structure

1. Introduction

The provision of clean water to consumers entails a cost both in terms of initial capital outlay and ongoing operation, maintenance, management and extension of services. However, because of poor planning of cost-recovery, a lack of government funding and inadequate tariff rates, the ability of water services sector to recover costs is often limited even for routine operation and maintenance. This has led to problems in providing sustainable water services to poor communities.

Cost recovery is widely recognised as an essential component in sustainable water services provision. It is only one of a number of conditions that must be present in order to guarantee the continuation of benefits intended by community water projects. Yet, it is an aspect that continues to draw an inordinate amount of attention, in South Africa and elsewhere, because of the swift impact that failed cost recovery can have on service provision and community development (Hilary et al.1999:1).

It is essential for long-term sustainability of the water services sector that costs are recovered by some mechanism, whether through application of full-based charges to consumers or by government support to the sector. Where cost-recovery and sector funding are being ignored, the effects are deterioration of infrastructure, which

eventually leads to the breakdown of systems, absence of an adequate water supply and an increased public health risk. (Hazelton, 1997: 34).

The willingness to pay for water services amongst consumers should be promoted and maintained. Unless consumers are convinced of the need to pay for services, cost-recovery will remain problematic and the long-term sustainability of water provision will be compromised. However, this also means that service quality needs to be sufficiently good to encourage payment and that water suppliers are seen to be responsive to the demands of consumers (Rogerson, 1996: 374).

In the Limpopo Province, many rural municipalities have as much as 80% of their capital budgets allocated to the provision of water services. Attempts to recover costs from these capital investments have generally failed. As with these rural municipalities, the Greater Tubatse Local Municipality is faced with the dual problem of addressing the water service backlog by providing new water infrastructure and recovering costs from the existing water infrastructure.

2. Problem Statement

The increasing financial burden on users to pay for water has turned water into a central political issue. More than three billion people worldwide have a daily income of less than a thousand rand, which places a severe limitation on their capacity to pay for the full economic costs of services such as water and electricity. Early in 2000, for example, the Department of Water Affairs and Forestry in the province of Kwa-Zulu Natal, South Africa, introduced cost-recovery on water. Rural households that were accustomed to free potable water at communal standpipes were charged a registration fee for a yard tap and/or a monthly rate for water usage. The registration fee and

volumetric charges proved too expensive, however, for thousands of low-income households struggling to survive on unpredictable income and meagre state pensions. For them, paying for water would mean giving up other essential goods and services (McDonald, 2002: 2). The task, therefore, of cost-recovery was to overcome the huge problem of inability to operate and maintain existing supplies properly with consequent increase in leakage, water supply interruption and likely deterioration in both the quality and quantity of the water supplied to communities.

In the Greater Tubatse Local Municipality about 50% of the total households still do not have access to government funded water services infrastructure. These households rely on natural water resources, such as rivers and wells. Health reasons are usually advanced against communities` use of those natural sources of water. Those households with access to 200m reconstruction and development programme (RDP) standpipes are deprived of regular water supply services mainly due to operation and maintenance problems. The Municipality does not have maintenance and operation strategy for the water services (Greater Tubatse Local Municipality, 2004:17).

3. Research Question

The following main question will guide the research process:

1. What are the appropriate cost-recovery mechanisms that will promote poor communities` access and use of government water services?

Associated with this main question are the following sub-questions:

1. What is the poverty profile of households under study?
2. What is the household`s perceived value of water to development?

3. What can be the most appropriate mechanisms for recovering costs in poor communities?
4. Why should costs relating to services be recovered?
5. Why is cost-recovery an important issue in the water sector?
6. What are the consequences of poor/inadequate cost-recovery?

4. Objectives

Specific objectives of the study include:

1. To establish the poverty profile of households under study.
2. To suggest appropriate water supply services cost recovery mechanisms for poor communities.
3. To establish factors that influence households or communities willingness to pay for water services.
4. To understand the significance of cost-recovery in the water supply services sector.
5. To analyse the implications of poor cost-recovery relating to water supply services.

5. Significance of the study

The study will help poor rural communities to identify the causes of lack of access, including poor cost recovery and use of government water services and suggest the appropriate mechanisms to be implemented to solve the problem. In addition, knowledge of policy makers pertaining to cost-recovery issues and the relationship between cost-recovery and community development shall be enhanced.

6. Research Design and Methodology

6.1 Case Study Design

The focus of this research is based on cost recovery associated with water services provision in the Greater Tubatse Local Municipality. This case study design facilitated learning about this complex issue of cost recovery, based on a comprehensive understanding of the issues obtained by extensive description and analysis of the issue taken as a whole and in its context (General Accounting Office, 1990).

The unique socio-economic circumstances of this Municipality warranted its treatment as a special case. The rich context and manifestation of this cost recovery issue was further obtained from a thorough analysis of three communities within this Municipality.

6.2 Sampling

The researcher conducted this investigation in the Greater Tubatse Local Municipality (the researcher is a resident in this Municipality). A stratified sampling was used to select three communities for this study. The communities included Maakubu, Maathipa and Ga-Podile. The selection of these communities was based on the level of water supply service: a community with standpipes; a community with yard connections; and a community with a well. In these selected communities a further random selection of households took place. The target number of households per community was 20, giving the total of 60 for three selected villages. There was

one interviewee per household. The interviewee was a resident of the community and over the age of 18.

6.3 Unit of Analysis and Sources of Data

According to Bless (1995: 57), the unit of analysis is the person or object about whom the researcher collects data. In this study the unit of analysis is cost recovery mechanisms in the water sector. The researcher will get information on cost recovery from the households, community based organizations, institutions and from documents.

In institutions, the researcher will look at both local institutions such as shops and community water committees and at extra local institutions such as Municipality and the Department of Water Affairs and Forestry.

6.4 Data Collection Tools

The study collected both qualitative and quantitative data. The study examined the cost recovery situation of three rural communities in the Limpopo Province. Qualitative data is simply non-measurable data on which, for example, the community's views, attitudes and perceptions on cost-recovery can be obtained. Quantitative data is simply measurable data on which the researcher can collect data on variables such as household size, age of respondent, income, distance to water source and water service charges.

The study used a questionnaire and interview technique in order to collect information on what causes the communities to be unable to pay for water services and the extent to which cost-recovery policy affects them. Both open-ended and close-ended questions were used. Focus group discussions with village water committees were held. Groups were also be given a chance to debate or discuss other issues relating to water shortages in the village. Key informants from affected organisations were identified through snowballing whereby the first identified informant directed the researcher to the next informant, with the subsequent informants also doing the same.

The researcher further conducted observations during the days of fieldwork in selected communities. These included transwalk, mapping and identification of water resources or related services. The researcher also relied on available secondary material from books, journals and government policy documents.

7. Data Analysis

The researcher used content analysis because it was easy to access and it worked on one level of meaning-the content of the data texts. Content analysis indicated that in working with qualitative data a researcher has many options on how to convert the ``raw`` data to a final pattern of meaning (analyse the data). Through this method, the researcher went to the conventional, straightforward ``qualitative coding and categorising`` route. That means the data was divided into small units of meaning, which were then systematically ``named`` (coded according to what a unit of meaning signifies for the researcher) and then grouped together in categories that contained related codes. Each category therefore, contained codes that were semantically

related. The researcher also used Statistical Package for Social Sciences (SPSS) to analyse quantitative data. Tables and graphs were also used to present and analyse data so that it could give a clear picture of the results.

8. Ethical Consideration

The introductory visit to the community was used to meet the tribal or community authority in order to obtain approval for the study and establish appropriate contacts within the village. The researcher had direct contact with all participants and she knew them. In this case, respondents were assured that the information given would be treated with confidentiality. That is, they were assured that data would only be used for the stated purpose of the research and that no other person would have access to the information.

9. Structure of Dissertation

The study comprises of five chapters that are organised as follows:

Chapter one: Study Focus, Methodology and Structure

This chapter addresses the research focus, methodology and structure through the discussion according to the following headings: background of the study, problem statement, research questions and objectives, significance of the study and description of the study area, research design and methods, data analysis, ethical consideration and structure of dissertation.

Chapter two: Literature Review

This chapter focuses on the historical and theoretical background of the study and share other scholarly insights on cost-recovery.

Chapter three: Description of the Study Area

A detailed socio-economic profile of the Greater Tubatse Local Municipality and selected case study communities is presented in this chapter.

Chapter four: Analysis and interpretation of data

In this chapter the focus of attention is based on the content analysis of the qualitative research data. In addition, tables and graphs produced through the SPSS provide a platform from which to analyse quantitative data.

Chapter five: Key findings, Recommendations and Conclusion

This chapter presents the key findings, from which the recommendations and conclusion shall be drawn.

Chapter Two

Literature Review

2.1. Introduction

Operation and maintenance are usually the most neglected aspects of any form of development. Poor or non-existent administrative and technical support and lack of funds for proper operation are cited as the most frequent causes for the failure of rural water supply systems.

In this chapter, literature about cost-recovery issues will be reviewed using books, journals and government documents. The first part focuses on the international overview of the cost-recovery policy, while the second part addresses water supply services and community development in South Africa.

2.2. Conceptualisation: Structure and Maintenance Costs and Cost -Recovery

2.2.1 Conceptualisation: What is Cost-Recovery?

According to Kumar (1996: 41), the costs involved in operating a water supply system can be classified into two components. First, it is fixed cost, which is mainly concerned with borrowed money from the financial institutions for the implementation of the project. The mode of debt servicing or repayment depends on the financing pattern of financial institutions. The fixed cost contains mainly: the repayment of the principal amount borrowed, and the repayment of interest on borrowed capital.

The second component involves variable costs. These costs deal mainly with operation and maintenance cost of the system as well sinking fund for the future replacement of the system. These costs mainly include: administrative expenses like salaries and wages, repair and maintenance charges, chemicals and consumables, electricity charges and depreciation charges.

Cost recovery refers to the practice of charging consumers the full (or near full) costs of providing services such as water and electricity. The concept of cost recovery is a simple one: the recovery of all, or most, of the costs associated with providing a particular service by the service provider. For publicly owned service providers, this may or may not include a surplus above and beyond the cost of production, while for private sector providers it necessarily includes a surplus (i.e. profit). In either case, the objective is to recoup the full costs of production.

It is argued by Whittington *et al* (1991:179), that for most water utilities and donor agencies, the actual water supply situation in the developing world is ``typically something of mystery`` with limited knowledge of the means by which households secure water, its use, costs or how much households might be willing to pay for improved services.

The international experience underscores the fact that there are ``obvious dangers in designing rural water supply systems without reasonable information on what services people want and for what they are willing to pay (Briscoe *et al*, 1990:128). Moreover, according to the World Bank (1987:117), the design of water supply projects in rural parts of the developing world has been overly supply-oriented to the neglect of crucial

considerations concerning consumer demand, more particularly, of consumer willingness to pay.

It was indicated by World Health Organisation (1990: 56), that in many countries, the issues of cost-recovery and sector sustainability were ignored for a long period. As a result, tariffs set were unrealistic and frequently there was insufficient government subsidy to make up the shortfall in the costs of the service provided. In consequence, the infrastructure has deteriorated and service quality has declined.

Inadequate cost recovery will result inability to operate and maintain existing supplies properly with consequent increase in leakage, water supply interruption and likely deterioration in both the quality and quantity of the water supplied. This will lead to increased public health risks, morbidity and mortality rates and increased burden on the health care system.

2.3 The Rationale behind Cost-Recovery

Having established what cost-recovery is in practical terms, the discussion now turns to the question of 'why': what is the rationale behind the introduction of cost-recovery on basic municipal services such as water. In answering this question the fiscal and moral arguments for and against cost recovery shall be presented. More especially, the emphasis shall be placed on how these arguments have been adopted in the South African context.

2.3.1. Fiscal Argument

The single most important reason given for cost-recovery is the need to ‘balance the books’. Cost recovery, as the World Bank (1996: 44) alluded to, is ‘‘a matter of good public fiscal practice’’, allowing governments to reduce the tax burden and thereby attract and retain human and financial capital. Cost-recovery in lower-income, it is argued, reduces the need for cross-subsidization from industry and higher income households, making a country or a municipality a more financially attractive place to locate.

It is also argued that cost-recovery is necessary to sustain services on a long-term basis. Without cost recovery, the argument goes; the state will not have the funds to invest in future service and infrastructure upgrades and extensions. Cost recovery is seen as ‘‘pro-poor’’ because it provides the fiscal basis for further service improvements and expansion: ‘‘when a public sector utility does not recover the cost of providing a service, it is often unable to extend the system-leaving poorer, marginal areas unconnected to the grid’’ (Brook and Locussol 2002: 37).

The South African government adopts the same basic line of argument, stating in the White Paper on Water Supply and Sanitation Policy (RSA 1994: 23), that if government does not recover operation and maintenance costs there will be a ‘‘reduction in finances available for the development of basic services for those citizens who have nothing. It is therefore not equitable for any community to expect not to pay for the recurring costs of their services. It is not the Government who is paying for their free services but the unserved’.

2.3.2. Moral Argument

Another set of arguments used to justify cost recovery are moral in nature. The first of these revolves around liberal notions of rights and responsibilities. If people have the ``right`` to a service like water then they also have the ``responsibility`` to pay for it.

The 1996 South African Constitution and Bill of Rights are classic expression of this thesis. `Everyone has the right`, for example, `to have access to sufficient food and water` (Bill of Rights, section 27 (1) b). But these rights are met with obligations. The Department of Water Affairs and Forestry, for example, has published a half-page newspaper advertisement entitled `knowing your water and sanitation rights and obligation` in which it is clearly stated that one obligation is `paying your bills for services rendered`. According to the Municipal Systems Act (RSA 2000a, s5.2.6), this obligation applies across the board, with residents having `duty` to pay for all of their municipal services.

A related argument is to be found in the burgeoning `willingness to pay` literature. The rationale here is that most people, low-income households included, accept their civic responsibility to pay the full costs of service delivery, and are happy to do so as long as the services are reliable, affordable and of good quality (Whittington et al, 1991).

Finally, it is argued that only by paying the full cost of a good service can one appreciate its true `value`. Receiving a service for free, or having it heavily subsidized, distorts not only its exchange value but its use value as well; the very essence of the thing being consumed. According to the World Bank (1996, 44), only

`` a fee reflecting the costs will encourage users to correctly value the service they receive``.

2.4 Advantages and Disadvantages of Cost-Recovery

Water supply services are known to provide benefits to communities in the form of health, opportunities for women and poverty reduction. It is widely accepted that water services must be improved, especially for the poor, who are the most likely to lack access to these services. But, providing water services is not free. As a result, strategic thinking is needed about how costs can be recovered whether from users, donors, government or others and what costs need to be recovered to encourage sustainability.

Cost-recovery is about consumers paying partial or full costs for their municipal services. Municipalities use it to balance their financial books, to avoid deficit financing and to stabilize finances for service delivery (Macdonald, 2002: 87). It is intended to generate revenue for future service upgrades and extensions and can be used along with progressive block tariffs to generate subsidies for poor households. It can be a way to manage demand for power or water by penalizing over-users.

Cost-recovery can also lay the groundwork for governments to sell services to private companies to run. Because such companies would not be interested in buying utilities that lose money, cost recovery is often seen as a pre-condition for privatisation.

According to the Human Development Report (2003:120), cost-recovery in the water sector matters because although aid programmes are increasingly multi-sectoral, urgent needs for health and education, along with high debt service level within developing country governments, constrain traditional sources of funding for the sector.

The Human Development Report (2003:124), further indicates that cost-recovery principles matter in the context of governance, as the gaps in institutional and administrative capacity in many governments are wide, translating into less efficient planning and budgeting for the water sector. According to the Report, in order to reduce the gaps in service provision, cost-recovery should and does play a critical role.

Drinking water programmes and projects are known to bring wider benefits to communities in the form of health, opportunities for women and poverty reduction (Bhatt et al, 2002:67). Given the overall societal gains that can be achieved, water services should be improved, especially for the poor, however, in spite of all efforts, internationally the number of people without improved water supply services remained practically the same in the past 10 years, and the majority of the people without services are those living in rural areas (WHO/UNICEF, 2000). Furthermore, it has been recognised that cost-recovery is today still one of the major obstacles towards sustainable drinking water (IRC-International Water and Sanitation Centre, 2001a).

According to Terry and Calaguas (2003:90), cost-recovery should and does play a critical role in the water sector to reduce the gaps in service provision. Without cost-recovery, financially strapped local authorities are unable to finance network expansions into peri-urban and rural areas, in order to properly maintain the existing services. They further indicate that low service levels and poor water quality decrease the willingness of customers to pay, which in turn lowers the service level. Poor cost recovery can lead to the waste of a possibly scarce resource, an inability to maintain machinery (such as pumps), and possible health risks if people are compelled to use alternative, and often unsafe, source of water.

In essence, low levels of cost-recovery from users and other sources lead to insufficient income for the effective and efficient operation and management of the service. This implies a poor ability to invest in the sector, whether through human investment or capital investment. As a result, poor service leads to the dissatisfaction of users thus decreasing willingness to pay, which, on top of already poor cost-recovery levels, further exacerbates the system.

2.5 Key Factors behind Successful Cost-Recovery

As argued by one research team: “water supply systems provide a low level of service (usually through public taps or hand pumps); they are heavily dependent on (often unreliable) government investment financing and transfers for operations and maintenance expenses; and the quality and quantity of services that are unreliable.

According to Fernando (1996:86), there are factors, which we must first understand other factors why water systems are rejected or not completely adopted, despite the one of cost-recovery.

2.5.1 Suitable Design

A water supply system should be designed well to suit the people. The crux of community participation, with the involvement of women as well as men, is that ultimately the system must suit the users. Most users are women and therefore the system must suit the women. Otherwise, they reject it and they will have justifiable or, sound reasons for doing so.

2.5.2 Easy Access

A water supply system should be easily accessible to the community. When this is not so the community continues to use the traditional sources, which are nearer, or where they do not have to wait long.

2.5.3 Easy Handle

The community, especially women must be able to operate systems easily, as they are most affected when systems do not function properly. Safe sources of water, for example foot and hand pumps, may be rejected because they cause difficulties for some women and children.

2.5.4 Users' Income

According to the World Bank (1987:97), water schemes often fail to achieve the goals set for the number of households to be connected to the water system, the amount of

water produced, and the gap between expectations and accomplishment is often great. The World Bank (1987), further indicates that there is a danger in designing rural water schemes without reasonable information on what services people want and for what they are willing to pay. The first step in planning water projects, whether in urban or rural areas, is for the resource planners to determine the percentage of household income that residents are able and willing to spend for individual potable water connections and subsequent commodity.

2.5.5. Users' Service Expectations

It was indicated in the African Sector Review (1997:54) that in many countries the government took upon itself the responsibility of recovering the costs of providing water and the people grew to expect free services. The general observation is that where there is no form of cost recovery for recurring costs, schemes are not sustainable. Where communities have been responsible for developing their own services either with assistance from the government or NGOs or without assistance, cost-recovery procedures of various forms have been established.

2.5.6 Service Charge

Duba (2001:17) argues that the pricing of water is very important and also considered the primary motivation to bring in the private sector. Water is considered by most to be free but in most cases this encourages poor management and use of water. The price of water should be made affordable to everyone, including the poor. To enable them to obtain basic water services while also achieving full cost-recovery for sustainability. Sustainability is very important more especially, for scarce resources such as water.

According to Clarke (1998:4), access to safe and affordable supply of drinking water is universally recognised as a human need for the present generation.

2.6 Institutional Issues Relating to Water Supply and Cost-Recovery.

In India, the execution of new water supply schemes and augmentation are the responsibility of the state, level water supply and sewerage board and local self government departments. Such schemes require large financial outlays. Therefore, judicious use of financial resources and measures to recover costs are a must to make the system sustainable.

According to Kumar (1996:76), the water supply sector in India has not been performing very well, perhaps due to the following reasons;

- Pricing mechanisms are poorly organised, that is tariff, rates not reflecting the true market situation;
- High maintenance bills (including wages/salaries) resulting in high unit costs;
- Poor revenue realisation performance compared to the demand for tax/user charges;
- Heavy losses due to the old system of infrastructure (e.g. corroded pipe lines and leaking joints) pilferage and theft; and
- Large component of the slum/poor population necessitating increase in provision of the services without adequate financial return.

In Senegal, the government introduced a policy of decentralization and the users of public infrastructure facilities such as water and health were encouraged to be part of

the operating costs. In principle, it was accepted that this would result in a higher level of involvement and responsibility by the users (Kerr, 1989: 67).

In line with this principle, Senegalese communities have established village water committees. Through such committees, the villagers are able to control the hours of pumping in accordance with their needs, organize their own community budget to purchase diesel and some spare parts, and contribute to the salary of the borehole custodian. Each village is able to retain control of its own community water fund until the need to purchase fuel or spare parts arise, and funds are kept exclusively for water, rather than form part of a more general community development budget.

In terms of how the contribution could be raised, some villagers argue that it would be best to make an annual contribution, after the sale of the cash crop harvest, whereas others feel that a monthly contribution would be easier to control and would ensure year-round operation of the system. The actual sum of money to be contributed ranges from 6 to 12 US cents per person (Kerr, 1989: 69).

2.7 Approaches towards Cost Recovery

The International Water and Sanitation Centre's approach to cost-recovery broadens what are usually considered as financial and economic costs. The IRC sees cost-recovery as the matching of all costs related to providing a sustainable service with all the available sources of funding. These funding sources may lie entirely with the users, but may also include external funding from governments or donors (IRC-International Water and Sanitation Centre, 2001a).

The crucial point is that unless all of the costs related to providing and maintaining a service (technical, human resource, institutional) are identified, organised, and covered in a coherent manner with sources of funds, a system cannot be considered to be sustainable. Both financial and economic approaches to cost recovery typically consider the system construction, and maintenance, as well as the training of the community and local non-governmental organizations during project implementation.

In addition, Bolt (2001:34) indicated that in rural and low income urban areas user based cost-recovery strategies become crucial, as communities are progressively made responsible or co-responsible for the financial management of their system. Making communities responsible has proven to be an effective strategy for achieving sustainability in operation and maintenance of the system (IRC- International Water and Sanitation Centre, 2001a). However, to date, such responsibility has typically been limited to the funding of system management and operation and management costs with, in some cases, a minor contribution to capital costs.

According to Terry and Calaguas (2003:98), the traditional approach to cost recovery considers only the financial costs of a project or programme, such as operations and maintenance (O&M) costs, capital costs and possibly investments for future growth and rehabilitation. They further indicate that a less narrow economic perspective considers, in addition to the financial costs, opportunity and environmental costs to society and the broader water resources environment of delivering secure water and sanitation services, in addition to the external impacts on individuals or communities.

Environmental costs may arise from increased wastewater flows or from reduced water available for ecosystem maintenance, but there are also possible benefits if improved sanitation reduces water pollution. Even full recovery of the financial costs associated with the operation and management of a system and those related with the environment does not guarantee that the system will continue to operate after it is constructed (Terry and Calaguas, 2003:99).

2.8 Mechanisms for Water Services Cost Recovery

2.8.1. Flat Rate

This entails all households in a community contributing an equal amount. The advantage of this system is that it can be community driven and requires very limited investment and the disadvantage of this approach is that household consumption does not play any role in the payable rate. The municipality still remains responsible for the operation and maintenance of the service.

2.8.2. District Metering

With district metering consumption in a specific area like, a village, is measured. A reservoir and water can therefore, be distributed more equitably between the various areas or villages benefiting from a commonly shared water source. The advantage of this system is that water usage can be measured and controlled to an extent but it ignores the individual households' consumption patterns. Control of this system is also community controlled and requires limited investment.

2.8.3. Prepaid Systems

In this system the municipality should theoretically recover the operation and maintenance costs of the scheme. The system does provide a method of controlling free basic water through programming of the individual household tokens. The system ignores systems already in place at municipalities who previously were responsible for cost recovery. In most cases, it requires the removal of conventional meters when there is a problem. This system relies heavily on good support infrastructure such as electricity and telecommunication.

2.8.4. Conventional Metering and Billing

This system is the most commonly used system by municipalities to implement cost-recovery. In essence, the system provides that all households are provided with a direct-metered connection. Meters are then read on a pre-determined cycles that may vary from monthly to say quarterly. The data is then captured in a billing system and a bill is produced which is then delivered to the consumer through the mail, hand delivery and any other means. The onus is then on the consumer to pay the bill at the municipal offices or points established for this purpose.

2.9. Cost-Recovery Issues in South Africa

According to the White Paper on Water Supply and Sanitation Policy (1994:23), communities must pay for the operation and maintenance costs to ensure both equity and sustainability. Where communities do not pay, and government must cover these

costs on their behalf, the result is a rapid reduction in finances available for the development of basic services for those citizens who have nothing.

Cost-recovery has not been the *modus operandi* of the South African government. During apartheid, many South Africans received subsidized services and infrastructure. White suburbanites and white-owned industries benefited the most from these subsidies, with service levels and subsidies in white areas that equalled, and often surpassed, European and North American standards (MacDonald, 2002:10). Much of this subsidization came at the expense of black workers and consumers who generated the economic surplus and paid the taxes necessary for lavish state spending in white areas, but even in black South Africa services that were delivered to the townships and rural ``homelands`` received some subsidies.

It is indicated by MacDonald (2002:5), that from 1994 as South Africa became a democratic country, the government claimed, for example, to have provided three million people with access to potable water, connected two and half million households to the national electricity grid, and built homes for another three million people in its five years of office. What these otherwise impressive statistics hide, however, is that hundreds of thousands of low-income households are unable to afford the prices being charged for these services-due in part to policies of increased cost recovery, and are unable to benefit from the infrastructure being provided.

Macdonald (2002:135) highlights that the most tragic example of inability to afford services began in mid-2000 in South Africa, when the provincial government in Kwa-Zulu Natal began charging rural residents for water that used to be free. Thousands of

poor households could not afford these costs and began using nearby rivers and stagnant ponds. Within weeks, cholera broke out, claimed more than 250 lives and caused more than 100,000 cases of illness. Cost-recovery then seemed to be a major factor as it was the cause of the cholera outbreak. It cost the South African government much to deal with the cholera crisis than it did to provide free water.

To give some sense of the scale of the problem, Macdonald (2002), indicates that 43,000 people (mostly black children under the age of five) die from diarrhoea related illness in South Africa every year. Direct medical costs for all are \$3,4 billion rand, with broader losses in economic production totalling another \$26 billion, and to supply proper water and sanitation to everybody in the country would cost less than two-thirds of that.

As indicated by MacDonnell (2001:34), scarce financial, human and water resources are major constraints on the delivery of sustainable water supplies to the previously disadvantaged rural communities of South Africa. During the period 1994-2000, the prevailing view in the South African water sector was that some form of cost-recovery from the beneficiary communities was necessary to compensate for the scarcity of external funding. Cost-recovery became so central to sustainability that, in many schemes, it became almost an end in itself.

2.9.1 The State of Cost-Recovery in South Africa

In apartheid South Africa, where, due to political reasons, many of the homelands administrations either did not or could not ensure that operating and maintenance

costs were paid by consumers and soon found that their entire budgets were consumed in maintaining the existing very low levels of services.

The result was that a small portion of the population enjoyed free services whilst the majority had no services.

Macdonald (2002) also mentions that the other reason why operation and maintenance costs should be borne by the communities is the principle of community based development. If the community expects some outside agency to be responsible for keeping their supplies going, they will have no control over the processes and lose leverage and ownership.

Responsibility for keeping the service going is placed with a remote authority and accountability is lost. This will have impact on the reliability of the supplies since the person who has to carry water everyday is likely to be far more interested in the sustainability of the village water scheme than some remote government officials.

According to the Department of Water Affairs and Forestry (1997:56), for cost recovery to work effectively, particularly where both the beneficiary community and an external subsidy are covering costs, there must be clarity on the responsibilities for paying different costs. There are many Department of Water Affairs and Forestry water schemes where the community is supposed to be paying for diesel (for example), but where the government ends up paying the bill. If funding is coming from more than one source, then a transparent allocation of costs is essential.

MacDonald (2002:86), argues that the `` ability to pay`` is the real problem with unemployment rates in the country at 35-40% (as high as 90% in some rural areas), with average household incomes in black rural and township areas below R1000 per month, many households are simply unable to pay the costs of services they use.

For water, the promise of six free kilolitres per household per month also offers little financial respite due to the fact most poor households need much more than six kilolitres (partly because of the larger number of people per household but also because the old and poorly constructed apartheid era infrastructure means that up to 40% of water going into townships is lost to leaks). Rapid tariff increases after this free block can then mean that poor families are paying more, and not less, for water.

Most importantly, the six kilolitre figure is based on an average household size of eight people and works out to 25 litres per person per day- half of the World Health Organisation's recommended minimum of 50 litres per person per day for basic needs and a healthy existence. The fact that these free services are calculated on a per household basis regardless of the actual number of household occupants, and regardless of household income, biases yet again against poor South African households.

2.9.2. Policy Context

In 1994, millions of South Africans were living without access to safe water supply and sanitation. At this time, it was estimated that 12 million people in rural areas had inadequate access to basic water supply services and that 21 million did not have the

basic level of sanitation (Republic of South Africa, 2002:106). It is acknowledged that the Department of Water Affairs and Forestry has come to realise that many people do not have access to an adequate supply of drinking water and basic sanitation. It is thus a goal of the government to ensure that everyone has essential basic water supply and basic sanitation (Government Gazette of 1997, Act no 108, section 3).

According to the White Paper on Water and Sanitation (1994: 15), basic water supply is defined as 25 litres per person per day for direct consumption within 200 meters of the home and of acceptable quality.

Water is essential for our lives and should be made available for all domestic activities as stated in the White Paper on Water and Sanitation (1996:11). It can be saved by closing taps and not leaving them running, by repairing leaks and using wastewater from the house to irrigate crops and trees.

Adequate and safe drinking water supplies and appropriate sanitation facilities form part of a sound basis for improvement in community health. Maximum health benefits can be achieved only if water and sanitation facilities operate continuously and to the full capacity with the acceptable standard of quality and quantity. Therefore, operation and maintenance must be carried out effectively and with efficiency (Department of Water Affairs and Forestry, 1996:14).

White Paper on Water and Sanitation (1994) states that sustainable water services must always take into consideration the protection and sustainability of the

environment because environment is a foundation from which resources are derived and it is important to protect and conserve the environment.

From the South African perspective, the contribution of water services to development is of course far wider than their impact on households. Water is a key factor of production in manufacturing industry, power generation, mining and agriculture. It sustains the natural environment, which is why it is the quantity of water available, which is critical, but also its quality, its fitness for use. For this reason, both sanitation services and economic activities, which can pollute water and render it unfit for use, must be controlled (White Paper on Water and Sanitation, 1994:2).

2.9.3. Critique of the free basic water policy

For water, the promise of six free kilolitres per household per month also offers little financial respite due to the fact that most poor households need much more than six kilolitres (partly because of the larger number of people per household but also because old and poorly constructed apartheid era infrastructure means that up to 40% of water going into townships is lost to leaks). Rapid tariff increases after this free block can then mean that poor families are paying more, not less, for water.

Most importantly, the 6 kilolitre figure is based on an average household size of eight people and works out to 25 litres per person per day- half of the World Health Organisation's recommended minimum of 50 litres per person per day for basic needs and a healthy existence. The fact that these free services are calculated on a per

household basis regardless of the actual number of occupants, and regardless of household income biases yet again against poor South African household.

2.9.4. Payment of Water Services

The Water Services Act emphasises that the primary consideration in the water services policy is the provision of a `` basic water supply`` to all households. The purpose of this regulation is to ensure that the tariff for a basic level of service is affordable even to the very poor. According to the Department of Water Affairs and Forestry `s policy on a free basic water supply, a water institution should make every effort to supply the basic water supply quantity of six kiloliters per household per month free of charge.

It would be the norm for users supplied out of standpipes and by means of controlled volume supplies to use not more than a basic supply and it would also be expected that these users would generally be representative of lower income groups. It should thus be the norm for such users to be supplied free of charge, or at the lowest cost that the water service institution can afford. (Guidelines for Compulsory National Standards for Water Services Tariffs, 1997:71)

2.9.5. Different Mechanisms available for Cost Recovery

According to Kumar (1996) the different possible tools available for cost recovery are:

- Water tariff
- Water tax as a percentage of rateable value where the properties do not have a metered water supply or water tax on the basis of floor area.

- Water kiosks systems for revenue generation through stand posts.
- One-time development charges/ water utility service charges collected through Land Development Authority.
- By internal cross subsidization by diverting other sources of funds like octroe for water supply purpose.

2.9.6. Guidelines for Cost Recovery

For any water supply scheme, the pricing structure should be such that 100 percent cost recovery should be ensured with a minimum burden on the poorest.

- Factors such as capacity to pay, benefits derived and proportionate cost of the service has to be considered.
- The rate must be enough to fetch the necessary revenue and at the same time not so excessive as to discourage consumers from making use of water or opting for alternative sources, which ultimately affect the pricing.
- Pricing system should be quite attractive; otherwise beneficiaries will explore the possibilities of alternative arrangements.

Conclusion

Cost recovery has been one of the most challenging aspects of implementing sustainable rural water supply schemes. There are no ``best practices`` for cost recovery, or management structures that can be replicated to ensure that the system will function optimally during 30 years. Rather, projects and programmes with successful financial and cost recovery strategies tend to share common principles, which have been found to contribute to sustainable system.

Cost recovery is vital if water supplies are to be sustainable and if they are to meet future demands. It is important that the revenue raised covers operation and maintenance costs and generates capital for extension and rehabilitation of water supplies.

Chapter Three

Description of Study Areas

3.1 Introduction

As a prelude to this chapter, the discussion focuses on presenting a comprehensive socio-economic development profile of the Greater Tubatse Local Municipality. This is the Municipality in which the three study communities are located. Subsequent to this overview of development in the Municipality, the state of poverty and water supply services in the three study communities of Ga-Podile, Maakubu and Maathipa shall be put on the spotlight. The object of this Chapter is to provide a socio-economic development context within which the analysis of cost recovery issues in the subsequent chapter shall be placed.

3.2 Background of Greater Tubatse Local Municipality

The Greater Tubatse Local Municipality is located north of the N4 highway, Belfast and Nelspruit, and east of the N1 highway, Groblersdal and Polokwane. It is a cross-border municipality spread between Limpopo and Mpumalanga Provinces. It forms part of the Sekhukhune District Municipality, which also includes Greater Groblersdal Local Municipality, Greater Marble Hall Local Municipality, Greater Makhuduthamaga Local Municipality and Greater Fetakgomo Local Municipality.

The economic base of the municipality is mainly in the mining and agriculture sectors. With the existence of good soil, a sub-tropical climate and the availability of

reasonable quantities of water, the area boasts of a strong and prosperous farming industry, which consists of fruit (citrus and grapes), vegetables (tomatoes, cabbage, beans and peppers), grain (wheat and maize), cotton and tobacco.

The economic centre of Greater Tubatse is the town of Burgersfort, which is also a hub of the booming Platinum mining sector. The mining activities around Burgersfort necessitated the construction of a Platinum Smelter in Polokwane. A railway line is planned between Burgersfort and Polokwane to transport the ore from the mines to the smelter.

The population statistics vary greatly depending on the source of information used. Some sources indicate that there are about 230 000 people living in the area, while others suggest there are 530 000 people. From these two extremes it is estimated that the figure is closer to 275 000 people (Greater Tubatse Local Municipality, 2004: 8).

The vast majority of households (approximately 68%) within Greater Tubatse Local Municipality earn less than R18 000 per annum, with 31% of the households getting social grants from the government. Poverty is therefore extremely high. Only 1% of households have annual income of greater than R132 000. Development in the area is therefore extremely complex, because the lack of employment and corresponding lack of income creates a continuous downward spiral in social well being. Increased future employment and possibly higher income figures, as a result of the growing mining activities in the area, will have a positive effect on the average households income and standard of living. (Greater Tubatse Local Municipality Integrated Development Plan, 2004:10)

The area is underdeveloped in terms of infrastructure and services. Water and sanitation are critical in ensuring the health and well being of the people and are therefore defined as basic needs. Within this context it is interesting to note that 33% of people in the Sekhukhune District Municipality obtain water from public taps and 32% through natural means (probably rivers and rainfall). In addition 11% obtain water from on-site taps and 10% from boreholes. In general there is poor water service provision within the region (Greater Tubatse Local Municipality Integrated Development Plan; 2004:11).

3.3 The status socio-economic development in the study communities

3.3.1 Ga-Podile Village

Ga-Podile is a black area, which is situated in the Far East, 135 km away from Polokwane and 50 km from Burgersfort. The village is located within the Driekop area of Greater Tubatse Local Municipality, under ward 10. Ga-Podile comprises three hundred and eighty nine households. In 2001 the population was estimated at 10257 and apart from that the population is increasing at an alarming rate.

The village has a number of general dealers, spaza outlets and one butchery. There are two primary schools and one secondary school, two crèches and an eskom kiosk, where the community buys electricity units. Public telephones are provided through the cellular network by a payphone kiosk and a card-operated phone in a shop. Housing consists mostly of modern cement and brick structures interspersed with some traditional dwellings. The village has electricity but no tarred roads.

Before the introduction of water project, residents at Ga-Podile were using a nearby river as their source of water, while others drew water from their own or neighbours' private boreholes. Whereas water from the river was free, water from neighbours was not. The usual arrangement was to pay R10 in order to draw a certain amount of water daily (generally 200 litre drum).

The government funded water supply project was initiated in May 1999 and completed by September the following year. The village use standpipes as their source of water, mostly at a 200-metre distance from their home. Ga-Podile has between 30 and 40 standpipes scattered throughout the three sections of the community. On each and every street around the village, two standpipes were placed at the corners to cater people with water. A majority of the households make use of the pit-latrines facilities with some households having no access to any sanitation at all.

Women in the community have fewer employment opportunities than men. Lack of paid work and the increasing demands of a higher standard of living are forcing residents of both sexes to seek opportunities outside the village. Most of the men live and work outside the rural area, often but not exclusively on the mines in Gauteng. But it is uncommon for them to remain inside the village to rely on the old age pension grant received by the grandparents. It is not unusual for an entire family of 7 to 12 members to survive on one old age pension. Crime and even violent crime are mentioned as serious problems, caused by high unemployment rate, especially among the youth.

3.3.2 Maakubu Village

Maakubu village is situated at Penge area in Limpopo Province. The village forms part of Greater Tubatse Local Municipality in the Sekhukhune region. The village is located 170 km from Polokwane and 45 km from Burgersfort.

The village is very small with 50 households. According to the Municipal IDP, the village consists of 549 people. The village is located in a mountainous area and has dongas. The village is a planned settlement type but there is a problem of service delivery, for example, the village does not have proper road infrastructure but buses and taxis use only poor gravel roads to the village. Maakubu village does not have electricity supply services. There is no public telephone in the village and cellular network coverage is poor.

There are two primary schools and one secondary school in the village. The children walk a distance to the schools which are built outside the village. There is no clinic but the community use the mobile clinic, which comes twice a month. Housing consists mostly of modern cement and mud houses or traditional huts. Most households have unimproved pit latrines made of corrugated iron.

Most of the community members use Burgersfort town for their shopping and stocking their goods for the shops even though the town is at approximately 45 kilometres from the village. There are only two shops and three spazas in the village. The community depends on small enterprises and subsistence farming.

Before the 1990s, people depended to a large extent on rivers as the main source of water supply. However, because of the non-dependability of the river flows this was not a very secure source. Furthermore, with the population growth the water became more and more contaminated with faecal pollution. Currently, the Well is the sole source of water for the majority of village residents.

Households that do not live close to the Well draw their water from the river or from the stream. The river water supply was far from abundant and normally required some digging to get water. Low rainfall further limited an already limited resource. A half a dozen households supplemented river water with rainwater, harvested from simple roof catchment's systems and is used for washing but not drinking. An access to clean water is still a problem to majority of the people at Maakubu.

3.3.3 Maathipa Village

Maathipa is situated in the Northern District of Limpopo Province. The village is located 100 km from Polokwane and 45 km from Burgersfort. This Sepedi-speaking community consists of 200 households, built along side or just off one main tarred road.

Maathipa has a crèche and one primary school but older children attend high school in a neighbouring village of Motlolo. There are electricity and public phones in the village. Houses are a mix of traditional and contemporary stock with most households having unimproved pits.

Commerce is limited to three cafes, and a number of spazas or informal shops. Livestock is common, but some of the households have gardens for home consumption. Jobs are scarce at Maathipa village, with at least half the men living and working outside the village.

In recent times, Maathipa is seeing a return of some men from the cities because of increased retrenchment, which are a result of macro (national) economic changes, which began soon after 1994. This has further increased the financial burden on the households. Young women also work away from home, including those who commute weekly or daily to poorly piece jobs in domestic services or on farms near Burgersfort.

Difficulties in obtaining an adequate water supply were a regular feature of life for most of Maathipa's inhabitants before a water project was initiated. The village had

depended on groundwater sources. The level of service varied in different sections, due mainly to some areas having more groundwater than others. One of the boreholes was deeper than the others and stood less chance of running dry. By the time the mine funded water project was proposed, the community had three public boreholes, two fitted with diesel-run pumps and the other fitted with a hand pump.

The old system was remembered for its unreliable service and lengthy breakdown period. About fifteen households were having their own boreholes and these were serving as an alternative water source for most residents when the public system was out of order.

The village has struggled for a long time with water provision. It was with the intervention of Marula Platinum Mine that water was finally provided in the village. This was a coincidence as the provision of the water was intended for the mine, as a result, the community benefited.

With this mine funded water supply system the community use yard connection instead of shared facilities as their source of water. The community has their own reservoir and the system is in good working order and provides a basic level of service reliably.

3.4. Conclusion

Poverty is characterised by the inability of individuals, households or communities to command sufficient resources to satisfy a socially acceptable minimum standard of living. Poverty is perceived by poor South Africans themselves to include alienation from the community, from food insecurity, crowded homes and lack of jobs that are

adequately paid and secure. Greater Tubatse Local Municipality is one of the Municipalities in Limpopo Province, which is affected by poverty. Lack of access to basic water supply is the major problem facing Greater Tubatse Local Municipality. Given the nature of rural economy from the three selected study areas, where economically active people migrate to cities, the majority of the population of Greater Tubatse Local Municipality aged above 18.

Currently majority of the population is employed while other rural communities rely on mining for employment. Therefore, mining is expected to increase its contribution to the local economy through the development of infrastructure in the mining areas of Tubatse. As in the case of Maathipa village, whereby the community has benefited from the water project that was meant for Marula Platinum mine.

Chapter Four

Analysis and Interpretation of Data

4.1 Introduction

The focus of attention of this chapter is analysing and interpreting the research data collected, to establish cost recovery mechanisms for water in poor rural communities in the Greater Tubatse Local Municipality, Limpopo Province. The study put on the spotlight three villages situated in the Greater Tubatse. The data was analysed and interpreted from a sample of 60 households, which makes 20 from each village.

This section addresses issues relating to poverty in the respondents' households, and also the state of water supply system management in each of the three study communities. In addition, the state of cost recovery in each of the three communities is analysed

4.2. Respondents' household's poverty profile, water service system management and Cost Recovery in Ga-Podile Village

4.2.1. Age of Respondents

Table 4.1 Age of respondents

Age	Respondent	Percentage
18-30	7	34%
31-40	11	54%
41-50	-	-
51-60	-	-
Above 60	2	12%

Total	20	100%
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Table 4.1 shows that about 54% of the respondents fall between the age of 31-40 with 34% being between 18-30 and only 12% being pensioners.

4.2.2. Head of Households

Table 4.2 Head of households

Head	Respondent	Percentage
Parent	14	53%
Child	6	47%
Other	-	
Total	20	100%

The table above shows that parents, either male or female, head 53% of the households while 47% are children headed households. Parents have gone to work most often in the cities and the children are left alone. According to Chambers (1983: 112), this kind of household is vulnerable. If the father dies, there is little hope of survival. The mother must go to work and the children are left in the care of aged relatives or without care at all. Responsibility for household water falls squarely on the shoulders of women and, to a lesser extent, children. Children manage the home and the homestead in the absence of their parents who are away working.

4.2.3. Respondents' Educational Qualifications

Table 4.3 Educational Qualifications

Qualification	Respondents	Percentage
No formal education	-	-
Primary education	2	12%

Matric	12	58%
Tertiary	4	18%
Work related	2	12%
Total	20	100%

This table shows that 58% of the respondents at Ga-Podile are literate. This means that they are able to read and write. They have gone through secondary school education, 18% has been able to go to tertiary and 12% have work related qualifications. This shows that with this high educational level, people will obtain better jobs and be able to pay for services such as water. Lack of paid work and the increasing demands of a higher standard of living will force residents of both sexes to seek opportunities outside the village.

4.2.4. Sources of income for the Respondents' Households

Table 4.4 Source of income

Sources of income	Respondents	Percentage
No income	4	20%
Poultry Project	3	16%
Social Grant	6	28%
Mine Workers	4	20%
Government Employees	3	16%
Total	20	100%

Majority of the respondents (28%) depend on social grants for living, 16% of the respondents get their income from poultry project in the area which is meant to create employment, 20% work at the local mine as cleaners, electricians or plumbers while

16% are government employees. Ga-Podile offers very few local employment opportunities, leaving both men and women to search for work outside the village. Most of the women in Ga-Podile are unemployed, describing themselves as ‘staying at home, taking care of children, cooking, fetching wood and water.’ The R15 water tariff is believed to be affordable for the majority.

4.3. Poverty in Respondents’ Households Management of Water Services and Cost Recovery

4.3.1. Operation and Maintenance

According to eighteen respondents, when a tap is broken, they report it to the water committee or operators. In case is a small component that is broken, the operator generally purchases the component at the local market and repair it. The community members are the one responsible for reporting a broken tap in the street.

According to the community, the following are responsible for fixing a broken tap: the operator and water committee, Department of Water Affairs and Forestry and Tubatse Water Board. The community should share operation and maintenance costs of the system with the assistance from the Municipality.

Each household pays R15 for operation and maintenance per month. Originally, the water committee and operators were responsible for the collection of the tariff. house-to-house collection system was used to collect the money. The money collected was then given to the bookkeeper for recording and banking. The money was also used to buy diesel, transport and the operator’s salary.

The water committee was elected and they are responsible for observing the borehole, control water wastage with the help of operator, do financial and office administration and execute minor maintenance activities. Duties vary according to how they have been allocated to individual members of the water committee. The water committee together with the community members hold public meetings at the community hall or at a nearby school to discuss how money is used.

Furthermore, the committee regularly reports to the community members, who have access to the books. As a result of lack of office, minutes are kept at the house of secretary. Payments and expense records appear to be well kept. Both men and women are in the committee and women comprise half of the committee's members.

The water committee state that the community must take responsibility for their borehole and must not think that the government or donors will do it for them. They say the community must be committed to the system and take ownership of it.

4.3.2. Factors that influence the communities' willingness to pay for water services.

Thirteen out of twenty respondents disagree with the issue of paying for water. They feel that water should be free as there is a policy of free basic water but to them that was a political promise and did not expect to be a reality. Seven households agree with the statement of paying for water. They said if the water-pumping machine is

using electricity or diesel, the community must buy those for them and take care for their own water supply services.

About 102 households out of 389 do not pay regularly. They are reported to the Induna who writes them a letter. If they still do not pay he decides what should be done.

Women and children collect water predominantly. Overall, the distance to and from the standpipe is 200m from the households. It takes the community less than 30 minutes to travel to and from the standpipe. The community fetches water once or twice a day; filling several 20-litre containers at a time and transporting them home in a wheelbarrow.

Water is kept in a house in a 210-litre drum, and it is ensured that is not contaminated. The community use water not only for drinking but also for their livestock, vegetable garden and small businesses.

4.3.3 Cost Recovery mechanisms for poor communities

Ga-Podile community was informed by the water committee that they would have to pay for water. The community suggested an amount of R15 to be fair for the current water service that they have in the village. The flat rate system was preferred, since facilities were shared and any other payment based on metered consumption would have been complicated and unpractical.

Twelve households were not satisfied with the amount charged for water. They say for those who are unemployed it could become a problem to pay monthly because they would be unable to afford the tariff so they would end up being in arrears. But some feel that R15 is too little because sometimes service interruptions occurred because of lack of diesel, to them the amount they pay is reasonable unlike paying R5.

Asking the community about the families that have their own boreholes as a primary source of water, whether they pay for water or not, the community said they are paying with the rationale that a time will come when they need to use the community standpipes.

According to the six households, house to house collection on a monthly basis will work best as records will be kept and receipts will be issued, twelve households prefer a water office or water pay point where records should be kept reflecting the amount paid and the name of the owner of the household and the stand number and receipts should be issued upon payment while two households prefer a pre-paid system.

4.4. Respondents' Households Poverty Profile, Water Service System Management in Maakubu Village

4.4.1. Age of Respondents

Table 4.5 Age of the respondents.

Age	Respondent	Percentage
18-30	7	34%
31-40	9	42%
41-50	2	12%

51-60	-	-
Above 60	2	12%
Total	20	100%

The table above indicates that approximately 34% of the respondents in Maakubu are older than 18 years but less than 30 years. This gives a clear picture that the most dominating age group is the youth followed by the old-age group.

4.4.2. Head of Households

Table 4.6 Head of households

Head	Respondent	Percentage
Parent	16	76%
Child	2	12%
Other	2	12%
Total	20	100%

The table above shows that 76% of the households at Maakubu are headed by parents, 12% by children and the other 12% by other relatives. In a female-headed household, the mother has a double responsibility; she must earn a living and at the same time, run a house, for instance collecting water. Therefore, female-headed households continue to bear the brunt of poverty and on-going food shortage.

4.4.3. Respondents' Educational Qualifications

Table 4.7 Educational Qualifications

Qualification	Respondents	Percentage
No formal education	10	50%
Primary education	3	16%
Matric	7	34
Tertiary	-	-
Work related	-	-
Total	20	100%

The level of education is low, particularly to the older people living in the deeper rural areas like Maakubu. About 50% of the respondents have no formal education. Lack of formal education by the community members is a serious problem in Greater Tubatse Local Municipal areas.

Due to the low educational level, only low- income work is obtainable, thus restricting possibilities to afford required training courses to give the people access to better work opportunities. The ideal will be to provide enough educational and training facilities to reduce illiteracy to the minimum.

Households with poorly educated heads, have a far higher incidence of poverty than those with better-educated household heads. The close relationship between poverty and the lack of education points to the importance of education in the implementation of an anti-poverty and development strategies.

Water might have been one contributing factor to the low educational attainment in this community. Young children, especially girls, could have been collecting water and performing other households' chores, disrupting their schooling. Therefore education is important to have a good source of income to be able to pay for water.

4.4.4. Sources of Income for the Respondents' Households

Table 4.8 Source of income

Source of income	Respondents	Percentage
No income	7	34%
Child Grant	5	22%
Pension Grant	5	22%
Domestic Workers	1	10%
Employed	2	12%
Total	20	100%

It is not uncommon that three out of four adults in a single household are unemployed. In this regard, 34% of the respondents have no income, 44% get their income from government social grant, 10% of the households are domestic workers while 12% are employed.

Unemployment estimates in the village vary between 45% and 70% of the economically active people (people between the ages of 18-40). Women form the greatest number affected by the lack of job opportunities as well as other social problems.

4.4.5. Operation and Maintenance

Since no quality regulation applies, it is up to the water users to ensure a safe private water supply. The community members are responsible for all aspects of owning, operating and maintaining the well. According to the community at Maakubu, every individual has a primary responsibility for the safety of the water drawn from the well. They do not benefit from the government's health protections for public water systems that must comply with federal and state regulations for frequent analysis, testing and reporting of results. Instead, other households educate themselves and sometimes they contact their local health department for information on getting their water tested.

For the community to have reliable, safe water from well, the well should be properly located, constructed to standards, carefully maintained, and protected from contamination. The community should also remember that the final responsibility for constructing the well correctly, protecting it from pollution, and maintaining it, falls on them.

4.4.6. Factors that influence the communities' willingness to pay for water services.

The community from Maakubu said they don't have any reasons of paying for water, because there is no water project in the village. The well that they use produces poor quality water and sometimes it gets dry. They wondered why they should pay for water if they could not even bathe in the well. At all the times of the day and even late

into the night, women and children can be seen going to fetch water on wheelbarrows or shopping wagons.

Besides the weight and size of the containers that have to be moved, there are obvious problems with storage and transportation of water in these unhygienic conditions, as water becomes very easily contaminated. Since there is no supply of electricity at Maakubu, the households use woods or paraffin to boil water in order to purify it from bacteria.

At Maakubu village, the respondents described the lack of basic needs as a social crisis in the sense that without water they are unable to meet their livelihoods. In this regard some of them continue to pay more charges for fetching water while others fetch water from unprotected areas. Apart from that, some of the respondents stated that they travel long hours to and from the source of water and in turn they had to stand long queues in order to get water.

Majority of the respondents' states that they no longer practise agricultural activities due to the fact that water is not enough for watering their crops and vegetables. They wait until there is a good rain during the growing season.

4.5. Respondents' Households Poverty Profile, Water Supply System

Management and Cost Recovery in Maathipa

4.5.1. Age of Respondents

Table 4.9 Age of the respondent.

Age	Respondent	Percentage
18-30	8	36%
31-40	5	22%
41-50	5	22%
51-60	1	10%
Above 60	1	10%
Total	20	100%

The table above shows that about 36% of the respondents fall between the age of 18-30 with age category of 31-40 and 41-50 having 22% each and 51 and above having 10% each. In this regard, water is predominantly collected by the youth, especially women.

4.5.2. Head of households

Table 4.10 Head of households.

Head	Respondent	Percentage
Parent	14	68%
Child	5	22%
Other	1	10%
Total	20	100%

The table above shows that parents head 68% of the households at Ga-Maathipa but most of them have a female as the head. Most of the households have female heads who are middle-aged with a low level of education, and often employed as labourers, self-employed or employed on a part-time basis. In addition, children who are in their

early twenties head 22% of the households. Some of them are already parents of their own while attending school. Lastly, relatives head 10% of the households.

4.5.3. Respondents' Educational Qualifications

Table 4.11 Educational Qualification

Qualification	Respondents	Percentage
No formal education	5	22%
Primary education	3	16%
Matric	6	28%
Tertiary	4	20%
Work related	2	12%
Total	20	100%

The above table shows that 22% of the respondents are illiterate, 16% went to primary school and about 28% of the respondents attended secondary education, while 20% of them have tertiary educational background and 12% has got work related qualification.

The people who have tertiary education, with no employment are forced to leave the area to find work elsewhere. This applies specifically to the group of people who have passed Grade 12. It may be concluded that an improvement on education levels is essential to support and ensure sustained growth in the village.

4.5.4. Sources of income for the respondents' households

Table 4.12 Source of income

Source of income	Respondents	Percentage
No income	7	34%
Child Grant	2	12%
Pension Grant	6	28%

Domestic Workers	2	12%
Employed	3	14%
Total	20	100%

The above table indicates that 34% of the households at Ga-Maathipa have no income. The income category ranging from R0-2000 constitutes 66% of the households, but the income is very low, to the extent that after meeting basic needs very little is left for the purchase of other goods. People at Ga-Maathipa live in relative poverty.

According to Chambers (1983:3), the concept of ‘relative poverty’ refers to people whose basic needs are met, but who, in terms of the social environment still experience some disadvantages. In other words, while managing to survive, some people are materially disadvantaged compared to others living in the same community or society.

4.5.5. Operation and Maintenance

The community and the Tubatse Water Board share the responsibility for the operation and maintenance of the system. The community carries out day-to-day operation and maintenance and small repairs, while the water board ensures supply from its end and assists with any larger problems, like in the case of the breakage of the main supply pipeline from the reservoir to the community.

An elected water committee, through its operator takes the lead in the management of water supply to the community. The operator’s job is to turn the water supply

system's engine on and off, monitor diesel and oil supplies. The engine does not run everyday, but it is activated on a need basis. There has been no major breakdown and the committee reports that the system has never stopped because of a failure to replace diesel or oil.

4.5.6. Factors that influence the community's willingness to pay for water services.

The majority of community members at Maathipa village often do not understand why they should have to pay for water, when they see significant amounts of money being saved for the future in a bank account. According to the households, there are those with low incomes and a low ability to pay for improved water supply services. However, households with low incomes are unable to pay for water because they need their financial resources for other basic needs such as food, health care, education and shelter. Presently, all community members at Maathipa pay the same amount of monthly fees, regardless of their socio-economic status.

4.5.7. Critical analysis for Cost Recovery mechanisms for the three villages.

Ga-Podile provides an example of a relatively large rural community that has had moderate to good success running its water supply system, thanks mainly to dedicated and well-organised water committee, Department of Water Affairs and Forestry and Tubatse Water Board. The main problems experienced since the project's completion have been technical (regular broken taps). For a consumer standpoint, the majority of Ga-Podile's residents enjoy the RDP minimum standard of 25l/p/d within the

established walking distance. Every household in the community is expected to pay, regardless of whether has its own borehole. No exemptions were considered. The R15 rate is thought by the water committee to be affordable, even for the very poor.

Maathipa is an example of a highly successful system of community water supply management, in that 95% of the community has access to and pays for an adequate, sustainable supply of clean water in their yards. Residents of Maathipa now enjoy a water supply system that is a vast improvement over their system of a few years ago. The water project brought considerable relief to the community and most of them have access to RDP level service.

Maakubu is the only community included in the study that did not have a RDP level water supply system. The village is still using a well as their source of water supply. In the absence of adequate level and quality of service, the water levy is based on the basic minimum cost of operating the system: purchase of diesel and lubricating oil to keep the pump running. Support of such arrangement in rural communities has been mixed, but Maakubu's reluctance to pay is noteworthy.

Lack of water project in the village or poor service has weakened many households's interest in paying for a less convenient and largely dysfunctional public service that does not meet the RDP minimum standard. In this regard, cost recovery may only succeed when the public service surpasses the "good" service that residents would enjoy in their yards.

Cost recovery in poor communities is often experienced as a new form of oppression especially for the very poor. In small, rural communities such as Ga-Podile, Maakubu and Maathipa, the need for enforcement measures in some ways exposes a strained relationship between consumer and service provider, and the failure of efforts to promote water supply as a service that costs money to provide. At the same time, the need for formal mechanisms to deal with non-payment remains an essential element to the sustainability of any service.

4.6. Conclusion

Poverty and rapid population growth in Limpopo Province combined with the use of open ponds and rivers for drinking water and poor sanitary practices contributes to a high level of water related morbidity and mortality in the 1990s. The government has since then provided more than 1.2 million water supply services in the rural areas.

Water supply services in many of the villages in Greater Tubatse Local Municipality tend to be negatively affected due to dysfunctional utilities/water department. Inadequate tariff structures, poor cost recovery, high unaccountedness for water and also deteriorating water quality are major problems that the poor communities are facing in the Greater Tubatse Municipal area.

In general, cost recovery is considered to be an important instrument to ensure ownership and in that way improve the sustainability. It is feared that if user group do not share in the costs, they will completely dependent and will not share in the responsibility. Therefore would not feel responsible for the efficient operation and

maintenance of the water supply system. If the users pay for their services, it would give them a voice and certain rights as well.

Communities whose water supply systems rely on diesel or electricity understand that a significant portion of funds collected goes to the purchase of diesel or electricity. Most are aware of the modest salary paid to the operator. In the case of Ga-Podile, community members know exactly where their money is going, they use it to buy diesel, for transport and the operator's salary.

The community from Maakubu said they don't have any reasons of paying for water, because there is no water project in the village. The Well that they use as source of water supply produces poor water quality and sometimes it gets dry. In both two villages, Ga-Podile and Ga-Maathipa, compulsory monthly meetings were held to ensure that everyone knows what is spent each month on what. They get reports on how funds are spent and also participated in any discussions on the possible use of savings.

It has been shown from the three villages that communities are willing to pay for good quality services and are prepared to pay increased costs for improved services in terms of water quality and supply continuity. Therefore, cost recovery is vital if water supplies are to be sustainable and if they are to meet future demands.

As Water Services Authority, Sekhukhune District Municipality has the responsibility to ensure that basic services are provided to all in their area of jurisdiction especially to the poor and unemployed. In order to ensure sustainability some form of

contribution is required from the beneficiaries. Although the Sekhukhune District Municipality should ensure that all have access to basic services such as water, sanitation, electricity and other services its common knowledge that certain areas and beneficiaries does receive more than basic services. Greater Tubatse and other areas such as Nebo, Marble Hall and Jane Furse fall in this category. These areas should contribute to the operation maintenance of the services and infrastructure provided. This can be done through cost recovery.

Cost recovery can be done in a number of ways but first the Sekhukhune District Municipality's officials and politicians must accept their responsibility in this huge task. There are a number of water schemes which have collapsed due to the fact that cost recovery did not receive the attention it deserves.

Chapter Five

Main Findings and Recommendations

Water is today perceived by the rural public as a social right, to be provided free by the Government, rather than a scarce resource which must be managed locally as a socio-economic good in order to ensure its effective use. This perception has been grown out of the fact that the present rural water supply systems are designed and executed by the Department/Board and, imposed on end-users.

Demand preferences of the people are not taken into account while executing the schemes. In other words, rural water supply programme till now has been adopting a supply driven approach. Experience has shown that the present approach had led to the failure of a large number of water supply systems/schemes due to poor operation and maintenance.

Cost recovery has always been one of the challenging aspects of implementing sustainable rural water supply schemes. Cost recovery by some means is essential for sustainable water supply. The following are the main findings from this study:

- Public water facilities that lack enforcement mechanisms for paying enable people to draw water for free. In the absence of preventative measures, defaulters can use community water supply systems with virtually no restrictions. In effect, paying for water is a voluntary act, with paying customers subsidising use by non-paying users. Over time, this unequal assumption of responsibility becomes a huge disincentive to payment, even to those who wish to pay. The more who opt out, the greater the impulse to

follow suit, and so on, until a small segment of the community is burdened with the system's operation and maintenance. Eventually, operation can cease altogether if no solution is found.

- Under communal water systems, all consumers are expected to pay the same monthly rate, regardless of their socio-economic status or level of consumption, as in Maathipa. In the absence of restrictions on consumption for domestic use, this could be construed as an advantage to those who are not paying. Indeed, it is difficult to regulate water consumption or meter out punitive action for non-payment in situations of shared facilities. In this context, pre-payment systems are attractive, as each household is accountable for his or her own payment decisions.

The following are recommended:

- Before any cost recovery strategy is formulated for a particular scheme, there should be clarity on the objective. Is the primary aim to recover costs, to increase accountability or to manage the water resources?
- If the aim is to recover costs, then a thorough cost benefit analysis is essential to assess whether the initiative makes financial sense;
- Given the shift of in government policy over the payment for water, future cost recovery or water resources management, water supply systems must accommodate the ability to ratio a first 6kl month of free water;
- Any cost recovery mechanism must be responsive to the needs and wishes of the target community and appropriate to the situation on the ground;

- Water suppliers should work on a policy of disconnection for non-payment as a means to ensure costs are recovered;
- Costs must be kept affordable for all consumers in order to protect the public's health;
- Decision makers have to be aware of the need for and benefits of cost recovery approaches that consider not only the construction, but the lifetime, rehabilitation and extension of water supply system and all the elements that are necessary to providing long-term support. That support has to be provided not just for the systems themselves, but also to make the systems affordable for the poorest consumers; and
- In terms of the community that uses a Well as a source of water, Municipality or Department of Water Affairs should assist by frequently sending its water quality section to take samples and analyse. If there is any contamination, they should discontinue source usage or use other methods for disinfection e.g. dosing the promide tablets of chlorine.

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APPENDIX 1

INTERVIEW QUESTIONNAIRE USED AT HOUSEHOLD LEVEL: RURAL WATER SUPPLY SERVICES COST RECOVERY MECHANISMS IN LIMPOPO PROVINCE: A CASE STUDY OF GREATER TUBATSE MUNICIPALITY

HOUSEHOLD PROFILE

1. Age of the respondent.....

2. Type of household

- Nuclear
- Extended

3. Who heads the household?

HEAD	MALE	FEMALE
Parent		
Child		
Other		

4. How many people live in the household (including migrants).....

5. Do you regard yourself as?

- Parent
- Child (blood)
- Relative

6. Highest Educational qualification

No formal Education	
Primary School	
Matric	
Tertiary Education	
Work related training	

7. Are you.....?

Receiving a pension	
Employed	
Unemployed	
Self-employed	
Student	
Other	

8. How much income do you get per month?

No income	
0-500	
501-1000	
1001-1500	
1501-2000	
Above 2001	

9. How many people work and stay away from home but share their income with the household?.....

10. How many people work and live in the home and share their income with the household?.....

11. Estimate the total monthly income for the household?.....

SERVICES

1. Do you have the following services?

SERVICES		
1.Electricity in the house		
2.Telephone connection		
3.Latrine in the yard		
4.Flush toilet		
5.Access to ploughing land outside the yard		
6.Access to ploughing land in the yard		
7. Access to grazing land		

2. How much electricity do you use per month?
R.....

3. If you have a telephone, how much do you pay on average per month?
R.....

WATER COLLECTION

1. Where do you collect water?

Private borehole	
Communal borehole	
Communal tap in yard	
Communal tap on street	
Well	

2. If you fetch water from a communal borehole, how far is this from your home?
.....meter/km
3. How often in a day or week do you fetch water? (If collection point is outside the yard)
.....a day.....a week
4. Are there queues where you collect water? (If collection point is outside the yard)
 - Yes
 - No
5. How many hours do you spend to travel to and from water collection point?
 - Less than 30 minutes
 - Between 30min-1hr
 - Between 1hr-1h30
 - Between 1h31-2hrs
 - More than 2hrs
6. Do you always get water at the collection point?
 - Yes
 - No
7. Do you buy water?
 - Yes
 - No
8. What is the market value of equipment that you use to collect water?
.....
9. Are the equipment you use to collect water causing any physical harm on you?
 - Yes
 - No

WATER STORAGE

1. What is the market value of equipment that you use to store water?.....
2. Do you think that your storage equipment ensures that water is not contaminated?
 - Yes
 - No

E.WATER USE

1. What do you use water for?
 - Livestock drinking
 - Cooking
 - Washing
 - Business

- Vegetables
 - Others
2. Is water sufficient to address the above functions?
 - Yes
 - No
 3. If no, why.....
 4. What new functions do you want to perform, but you cannot as a result of inadequate water supply.

.....

.....

.....

.....
 5. In performing the water functions in E1, the amount of water wasted is...
 - Zero
 - Low
 - Medium
 - High
 6. What is the market value of equipment/tools that you use in performing your water function?.....

F.OPERATION AND MAINTENANCE

1. When a tap in the street is faulty or broken what do you do to get it fixed?

.....

.....

.....
2. In your opinion, whose responsibility is it to report a broken tap in the street?

.....

.....

.....
3. In your opinion, whose responsibility is it to fix a broken tap?

.....

.....

.....
4. How long does it take before reported broken taps or pipes can be repaired?

.....days.....weeks.....month
5. What are the problems with the current water supply systems?

.....

.....

.....

G.PAYMENT FOR SERVICES

1. Have you been paying for water services in the past year?
 - Yes
 - No
2. What systems are used to collect money?

Water pay point	
-----------------	--

House to House	
Pre-paid meter	
Others	

3. How much do you pay for water services per month?
R.....

4. And what is the money that you are paying used for?
.....
.....
.....

5. How often do households in the community pay for water?
 Monthly
 Weekly
 Annually

6. Were you told before that you would have to pay for water services?
 Yes
 No

7. Do you agree or disagree with the statement that if you use water, you must pay for it?

Agree		Disagree	
-------	--	----------	--

8. If you agree, why?.....
.....

9. If you disagree, why?.....

10. Are you satisfied or not satisfied with the amount charged for water services?
 Yes
 no

11. If satisfied, why?.....
.....

12. If not satisfied, why?.....
.....

13. Are you satisfied or not satisfied with the current payment system for water in your community?

Agree		Disagree	
-------	--	----------	--

14. IF SATISFIED

Why do you think it is a good system?

.....
.....
.....

15. IF NOT SATISFIED

What do you think is wrong with the system?

.....
.....
.....

16. Is there a local person/resident/organization responsible for operating and maintaining the water supply system in the community?

- a. Yes
- b. No

17. Was the person/organization elected or appointed to perform the operation and maintenance functions of water?

Elected		Appointed		Not Sure	
---------	--	-----------	--	----------	--

18. Do you prefer paying a flat rate or differentiated (consumption based) amount for water?

- a. Flat rate
- b. Differentiated (consumption based)
- c. None

19. In your opinion what amount would be fair for the current water service that you have in the community? R.....

20. In your opinion what kind of collection system will work best?

.....
.....

APPENDIX II

INTERVIEW QUESTIONNAIRE SCHEDULED FOR VILLAGE WATER COMMITTEE

1. How was the committee formed?

- Elected
- Appointed
- Other

2. What does the water committee do?.....
.....
.....
.....

3. Does the water committee hold public meeting?

- Yes
- No

4. When and where are these meetings held?.....
.....
.....

5. Does water committee give financial report?

- Yes
- No

6. How often does the committee give the report?.....

7. Who are in the committee?

- Women
- Men