

**TOWARDS MORE SUSTAINABLE RURAL WATER
SUPPLY SCHEMES IN South Africa**

THE CASE OF KUTAMA/SINTHUMULE

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Master of Science in Development Planning**

DECLARATION

I declare that this research report is my own unaided work. It is submitted for the degree of Master of Science in the University of the Witwatersrand, Johannesburg. It has never been submitted to any other university before

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08TH Day of October 1999

DEDICATION

**Dedicated to my late father, Malose Jimmy
Lebelo and my Grandmother, Francinah 'Ngwana
Ledwaba' Lebelo; I wish you were here to
witness my achievements 'cause you have been
my source of inspiration through**

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FOREWORD

Water is one of the most basic needs that falls under the community development priorities. It is essential to man, animals and plants and without water life on earth would not exist. From the very beginning of human civilization, people have settled close to water sources, along rivers, besides lakes or near natural springs. Indeed where people live, some water is normally available for drinking, domestic use, and possibly for watering animals. This does not imply however, that the available source of water is safe and wholesome.

The international experience of rural water and sanitation development indicates that this is a field which is filled with problems and the United Nations quotes a failure rate of some 80% in Africa and the Water Decade of the United Nations did not achieve its objectives. In recent years this topic has received rigorous attention and has pointed the direction which should be followed in South Africa, and I quote: “The overwhelming conclusion is the State as the agency of rural community water and sanitation development”. (Abrahams and van Niekerk, 1994). It is recognized that the provision of basic community infrastructure is economically viable only if it is provided in a context of a total development strategy.

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CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 Background to the study

Nearly half of the population of the world lives in rural areas of developing countries (Newiger, undated:25). Improvements in living conditions have briefly benefited the urban population, which is smaller but growing faster and is politically more powerful, thus widening further the gap between rural and urban areas in respect of incomes, services, amenities and the general quality of life. Moreover, differences within the rural population have also widened. In many countries the small improvements that have been achieved have mainly benefited those who were already relatively well off, rather than the rest of the poor.

In South Africa almost three quarters of the poor live in the rural areas especially but not only in the former homelands. Of these, children less than five years, the youth and the elderly are particularly vulnerable; women more so than men. The highly skewed distribution of incomes in rural South Africa goes hand in hand with highly inequitable levels of literacy, education, health and housing, and lack of access to water and fuel. Rural areas have far fewer services than the towns. All of these factors limit the ability of rural households to improve their standard of living (South Africa. Department of Land Affairs, 1997).

It is now a well-established fact that no rural development can be achieved in rural areas; as long as the majority of the rural population, namely the poor, continues to remain unproductive and underdeveloped. Therefore the question is what should be the community development priorities under the prevailing political and economic conditions.

The basic need strategy is concerned with the remaining mass deprivation, a concern that has always been at the heart of development. The idea that the basic needs of all should be satisfied before the less essential needs of a few is met is in principle very widely accepted. More recently, thinkers and practitioners from many countries, internationals and agencies, and bilateral aid donors have made meeting basic human needs a primary objective of development, and this has been embedded in many development plans (Streeten,1984).

Water is one of the most basic need that falls under the community development priorities. It is essential to man, animals and plants and without water life on earth would not exist. From the very beginning of human civilization, people have settled close to water sources, along rivers, besides lakes or near natural springs. Indeed where people live, some water is normally available for drinking, domestic use, and possibly for watering animals. This does not imply however, that the available source of water is safe and wholesome.

A few litres of water each day are sufficient for a person's basic drinking and food preparation requirements, depending on climate and lifestyle. Much larger quantities are necessary when water is used for other purposes such as personal hygiene, cleansing of cooking utensils, laundry and house cleaning. Safe, adequate and accessible supplies of water, combined with proper sanitation, are surely basic needs and essential components of primary health care. They can help reduce many of the diseases affecting underprivileged populations, especially those who live in rural and urban fringe areas.

Safe drinking water is important in the control of many diseases. This is particularly well established for diseases such as diarrhea, cholera, typhoid and paratyphoid fever, infectious hepatitis, amoebic and bacillary dysentery. It has been estimated that as many as 80 percent of all diseases in the world are associated with unsafe water (IRC,1986:9).

On the contrary, in many countries people live in areas where water is scarce. Often it has to be carried over long distances, particularly during dry periods. Scarcity of water may also lead people to use sources that are contaminated by human or animal faeces and are thus dangerous to human health

South Africa is not exempt from the problem of water scarcity. As the population grows, and demands on finite resource increase, water is set to become the crucial resource limiting South Africa's future growth and prosperity (SA Yearbook, 1998).

1.2 Justification of the study

Access to clean water supplies and hygienic sanitation facilities has been racially and geographically skewed in South Africa. In 1994, the newly elected Government estimated that more than 12 million South Africans lacked access to clean water and 21 million were without "adequate" sanitation facilities (DWAF, 1994). The overwhelming majority of people without such services are black and live in rural South Africa.

The South African water supply and environmental Sanitation Sector has made significant progress in redressing imbalances since 1994. Portable water has been delivered to an estimated 3 million South Africans (SA Yearbook, 1998:59). This considerable achievement has, in many respects, propelled the water supply sector into the forefront of development delivery in the country.

The South African water sector is also praised in local and international circles for its progressive policies. The passage of the Water Services Act of 1997 is only the most recent example of the world's renowned Sector policy and legislation from South Africa.

Though there is broad recognition that the approaches promoted by government, with its emphasis on health rather than infrastructure is appropriate. There is slow rate of delivery in the sanitation sector. Yet, despite the well-publicized successes of the water and environmental sanitation sector, unease among practitioners about the sustainability of recently completed projects grows. This anxiety is particularly acute in the water sector, although sanitation sector role players justifiably worry about the sustainability of current South African Policy. As more communities come on line, others, it appears, are unable to maintain their existing facilities.

Recent surveys of completed RDP schemes according to Ninham Shand (1998:8) present a disappointing picture. For instance in the Eastern Cape of 15 completed projects only 5 were still working in 1995.

1.3 Aim of the study

The purpose of this study is to explore some of the contributing factors that consistently undermine sustainability of water delivery in rural water supply schemes in South Africa. The study also suggests ways in which the current approaches to water supply could be reconsidered.

This was achieved by evaluating Kutama/Sinthumule Regional Water Scheme which was used as a case study. The project is one of the Special Presidential Lead Projects in the country, was chosen because it cost R47 Million to construct and 2 weeks after the former minister of Water Affairs and Forestry Prof. Kader Asmal inaugurated it, the scheme was vandalized at a loss of a quarter of a million. The project is currently at the verge of collapse.

1.4 Objectives of the study

The objectives of the study are identified as follows:

1. To establish whether or not the project fulfills its objectives, that is:
 - Providing the communities of the study area with assured minimum supply of portable water at community standpipe level of 25 litre per person per day
 - Providing employment opportunities
 - Providing training to facilitate upliftment and empowerment of the beneficiary community
2. Explore the theories and policies that have influenced rural development in South Africa
Assess the existing water supply policy in South Africa
3. Evaluate the Kutama/Sinthumule water project for sustainability to ensure an understanding of the scope of sustainability problems
4. Present recommendations to solve identified problems

1.5 Research Methodology

The methodology applied during the study includes the Case Study method which was used to collect primary information and the review of related literature which supplied secondary information.

1.5.1 Literature Review

The literature books, magazines, articles etc were accessed from among others, places like:

- University of the Witwatersrand libraries
The Online Public Access Catalogue ensured a survey of local as well as international database for various books, journals and Articles

- The Mvula Trust Resource Centre
The largest Non Governmental Organisation dealing with water provision in South Africa was also resourceful.
- Department of Water Affairs and Forestry Resource Centre, etc
The national department dealing with water provision in South Africa provided among others policy documents etc

1.5.2 Case study methodology

The methodology used for collecting primary information is the case study methodology.

However, the study also used document analysis, observation and informal discussions with some of the participants a practice which is supported by Busha and Harter (1980:151) when they state that data-gathering methods in case studies can be supplemented by structure techniques such as interviews and questionnaires. Case studies strive to highlight the features or attributes of social life. The attributes may consists of a set of interactions, common behaviours of structures.

The study was also exploratory and descriptive. Gay (1976:123) states that descriptive research involves collecting data in order to test hypotheses or to answer questions concerning the current status of the subject of the study. A descriptive study determines and reports the way things are..

The case study method seems to be a poor basis for generalizations, but certain activities or problems or responses do come repeatedly. Thus, for the case study method, certain generalizations can be drawn (Stake, 1995:7). Hall et al. (in Levin, 1997:28) argue that case studies can be used for producing generalizations if, among other things, the researcher searches for regularities.

Stake distinguishes between intrinsic case study and an instrumental case study. According to Stake (1995:16), one of the most important things for the intrinsic case study is that the case is dominant; the case is of the highest importance. The Kutama/Sinthumule water project is of highest importance because it is one of the projects that could inform future policies and strategy for sustainable water provision. He further points out that issues are not simple and clean, but intricately wired to political, social, historical, and especially personal context.

1.5.1.1 Reasons for choosing case study method

1.5.1.1.1 Advantages of the case study

The case study method allows in-depth focussing on shifting relationships, it captures complexities, allows a focus on the local understandings and sense of participants in the case and it provides readable data that brings research to life and are true to the concerns and meanings under scrutiny (Edwards and Talbot, 1995:48). These characteristics were considered desirable in carrying out the study.

1.5.2 Sampling

Random sampling was used during the interview. The unit of analysis consisted of thirty community members out of the total of 65 917 people. 15 men and 15 women. These were equally chosen according to their social class i.e. poor, middle and rich men and women. CEO of the Greater Louis Trichardt TLC, 1 Provincial DWAF Official, 1 National DWAF official, 1 District council, the Implementing Agent (Lepelle water Board), project steering committee members and the consultants involved in the project 2 traditional leaders.

1.5.3 Analysis of the questionnaires

1.5.3.1 Structured items

The researcher read the questionnaires and drew up a coding key which identified each question by labeling whether it needed content analysis or whether it could be coded using the Multiple Choice Questionnaire (MCQ) sheet format as a guide. Those questions that needed coding were assigned an item number and the individual items were assigned an alphabetical letter. The letter corresponded with the choices available on the MCQ, which in this case range from A to E for each item. Questions that had choices beyond “E” were assigned the next item number and started from “A”.

In this way the researcher formulated a coding sheet, identifying each question and checking off the letter which corresponded with the answer the participant had given.

1.5.3.1.1 Semi-structured items

Holsti (in Lincoln and Guba, 1985:337), suggests that there are five major characteristics of modern content analysis:

1. It is a process that is carried out on the basis of explicitly formulated rules and procedures. The rules and procedures should be formulated before the analysis is undertaken.
2. Content analysis is a systematic process, which assists in conforming to “certain general canons of category construction”.
3. Content analysis is a process that aims for generality.
4. The content analysis deals in manifest content. The context is not only important to the receiver but also to the analyst.
5. Content analysis has typically been viewed as a quantitative technique.

1.5.3.3.1 Analysis of interview notes

The first step with the interviews was to transcribe the tapes. The researcher then examined the notes and highlighted key points. The key points were written on index cards as keywords and the interview number was used to identifier.

1.6 Structure of the report

Chapter one of this report covers introduction to the study. The theoretical framework and the literature review on which the study is based are discussed in chapters 2 and 3 consecutively. Chapter 4 discusses the study area, whilst chapter 5 analysis the data (identify sustainability problems and come up with recommendations to solve the problems). Chapter six is the concluding section of the report.

1.8 Summary

This chapter covers the background to the study, justification for the study. It then follows with the aim of the study and the objectives. It further outlines the research methodology, as well as the structure of the report.

CHAPTER 2

THEORETICAL FRAMEWORK: DEVELOPMENT PARADIGMS

2.1 Introduction

The intertwined problems and challenges confronting development in rural areas such as poverty, unemployment, inequality and malnutrition, have provided fertile ground for generating various approaches to development and these are pronounced as development paradigms (Mulalo, 1998). This section of the report discusses these development paradigms and how they influenced development planning in South Africa.

2.2 Modernisation and rural development

Fair (1982:2) reports how the death of neo-classical economics after the World War II was accompanied by the emergence of the Modernization theory, which was also known as the diffusionist Paradigm. The modernization paradigm is rooted in sociological theory, which presents the development of human society in terms of uni-linear change from simple traditional societies to complex modern communities. In a rural development context, the traditional rural development was matched with underdevelopment, primitive, simple, homogenous, undifferentiated and supernatural influence whilst rural development in the modernity context was believed to be associated with development, modernity, complexity, heterogeneity, differentiation, secular and technological influence. It is argued that the incongruity, which exists between them, results to a development problem (Fair, 1982: 2).

In addition, it is the most common paradigm that originated in the crises of the 1950's balanced and unbalanced growth controversy. In line with these crises, a number of economic theorists, such as those inspired by the Marshall plan believed that economic growth could be promoted along an emphasis on

maximizing the growth of an economy as measured by the GDP and through a process of structural change (Mabogunje, 1989). The fundamental premise to modernization was that for development to occur, traditional societies with pervasive interpersonal contracts and communal values which make them static, and resistant to change, must be changed to modern societies where relationships are impersonal, marked by individual achievement and role specificity (Drakakis, 1990).

During this period rural areas were regarded as being characterized by backward development in the mode of planning. In the modernity era, the role of planner was therefore seen as integration of backward communities and rural areas into the modern space economy. Planners operated in this paradigm were concerned mainly with introducing modernism into lagging regions by diffusing innovation down the hierarchy of urban settlements and with a belief that a trickle-down effect would occur to the rural poor (Hirshchman, 1994: 369).

It is evident that there is a dualistic view attached to understanding the existing contrast between rural and urban counterparts. According to (Fair 1982), the contrast does not present the problem of unequal development but also elaborates the dualism between the advanced urban areas and the underdeveloped rural counterparts.

According to Hansen (1981), the main problems in rural areas or less developed areas are caused by low productivity of labor, which is in part a function of inadequate supply of physical capital. Evans (1979) supported that an increase in capital investment, which would substantially increase production and in turn the general economic welfare, is necessary for rural development. Magnus and Bjorn (1988) discredit these arguments by indicating that in an economy which is highly agrarian, the task of modernizing the rural sector, through mechanization, capitalization, and developments in biotechnology results in harm than good.

Myrda (1958) saw the most effective way of attaining high levels of economic growth to be through heavy investment in capital intensive industries as a leading sector, and urban systems benefits in which through backward linkages and trickle down effects would spread to the more backward rural areas. Rostow (1969) in his famous analysis of historic stages of growth made a major contribution to modernization as well. Following Myrdal, Rostow identified five sequential stages of economic growth; firstly, the self-sufficient and subsistence economy; self-sufficient and subsistence economy; the pre-take off stage of the rearrangement of society conducive to economic growth; the take-off stage during which rapid increase in national income is attained; the drive into technological maturity and finally, the stage of high mass consumption.

2.2.1 Effects of Modernization in rural development

It was evident that modernization as a strategy to restructure rural development did not subsist in practice. The problems of rural areas grew increasingly worse. For example, rural areas became a true reflection of periphery. Resources were drawn out of the rural areas to boost the urban economy. Consequently, the most economically active population migrated to urban areas, leaving rural development with the old, disabled and women in particular. The concentration of development in urban areas also resulted in the problem of dualism between the core and the peripheries, the former being more developed while the latter remain marginalised.

Yet, different scholars have criticized the modernization paradigm from both left and right. According to Webster (1990), the theory explains the way in which society develops, but there is little explanation offered in the theory, as a result it fails to deal adequately with social differentiation which exists within rural societies. In addition, the approach has also failed to deal adequately with the complexities of economic rural development. Sargent (1991: 182) argues that the method of measuring economic growth by GNP is misleading and that economic growth is not the same as economic development. It is apparent from the

arguments that economic growth may increase income level while on the flip side of the coin it increases the dependency syndrome on outside capital and technology. The way in which income is distributed among the rural poor poses paradoxical questions.

Furthermore, Misra and Bhooshan (1980) point out that stages of growth cannot clearly be differentiated, the conditions and characteristics are mixed up in all stages of growth and causes of growth cannot be readily separated from effect. According to Misra and Bhooshan (1980), no economy has self-sustaining growth but other factors, like the action of the state, are necessary for making their growth self-sustaining. Therefore for modernization to assume that every society has to progress and pass through a fixed set of stages is more than confusing and highly problematic.

2.3 Dependency paradigm and rural development

In the late 1960s, the diffusionist paradigm that became popular soon after the Second World War lost its prestigious support. The trickle-down effect failed to bring about rural economic development. Problems of regional imbalances occurred at an alarming rate, structural unemployment was rife and rural crises were also evident. As a result, the dependency paradigm emerged as an anti-thesis to the modernization paradigm with Marxist background attachment. Whether or not dependency paradigm disrated these failures is subject to this debate.

The Dependency paradigm originated from the development experiences of Latin America under economic crisis. It advocates that the underdevelopment of Third

World Countries is a direct result of the dependency syndrome on the international economy (Seers, 1983: 13). According to the dependency theorists, the only way out to solve the development crisis was to delink from international

markets and also through import substitution by industrialization. It was again believed that economic activities from within should be supported by increased export (Coetzee, 1992).

2.3.1 Effects of Dependency in rural development

In essence, the dependency strategy was censorious of the exploitation of rural areas, but it did not materialize in practice and the strategies were derided to failure. For example, in South Africa, the entrism of dependency argued that the establishment of homelands was a problem. It further censured that the problem of homelands did not only create dependency on economic terms but also human resource base is also dependent in one way or the other.

The introduction of betterment planning in the homelands was seen as one way out of the dependency syndrome in South Africa. However, this strategy was marked mostly by failures than success.

Therefore it is apparent that the dependency paradigm, as an intended prescription to solve the inherent problems of modernization has suffered similar criticisms as well. In essence, Sandbrook (1982) argues that the dependency theory failed to solve problems, instead, it increased problems of rural areas, such as, rural-urban migration, the problem of dualism, rural-urban income disparities and at large poverty, which is a major drawback of rural development. According to Coetzee (1992: 142), the failure of the dependency theory is criticized for concentrating too much on external barriers to development and therefore, generalizing from the experiences of a few backward countries was one huge mistake that led to its misfortune failures.

The idea of perusing rural development within this framework of dependency raises more questions than answers. It is an obvious dictum from dependency criticisms that if a country desires to experience development misery, such as,

lifting up the gap between rural and urban or rich and poor, alternatively, it should go the dependency route. With respect to rural development, under the African philosophy of socialism, different African countries in the 1960s experienced their development paths geared by dependency paradigm. Countries such as Tanzania, Angola, Ethiopia, Mozambique and Ghana have experienced more failure than success in the pursuit of the dependency paradigm.

It is apparent that the dependency theory as a prescription for treating a country with serious rural problems and economic illness is not something to be desired. It has been proved that those rural areas that have pursue their development without dependence are likely to develop better than those that have (Coetzee, 1989). The problem seems to be that the assumption on which this theory is based does not hold for rural areas, as the experiences of Latin America and South Africa have indicated. This argument never had a head on in the rural areas because it was targeting capitalist development.

However, in the late 1970s rural development was incorporated into a more sophisticated Neo-Marxist analytical framework that located development of the Third World within the historical context of global capitalism. This analytical framework was concerned with establishing whether class conflict or the nature of capitalism was a major engine for rural development. Nevertheless, it was also criticized from both left and right like its predecessor dependency paradigm.

2.4 Reformist paradigm and rural development

The modernist and dependency paradigms were rebuked for their macro-level abstract theorizing for relegation of the people to a subordinate or insignificant status and finally, for lack of attention to and inability to resolve contemporary real world rural problems (Browett, 1992; Brookfield, 1995). This has provided fertility for the new paradigm for rural development to develop. Consequently, the reformist approach emerged as the next dominant paradigm in rural development.

It is mainly embedded within a broad framework of capitalist development. It argued for a direct assault of rural poverty and a bottom-up approach to planning. Moreover, it argued that the definition of rural development should not be limited to the material aspects, but it should also consider the non-material aspects (Browett, 1992). For example, in South Africa, betterment planning has been introduced as part of reformist ideas.

Various major approaches for rural development, often known as the plethora of new slogans, such as the New International Economic Order, redistribution with growth, the basic needs, basic services, participation or bottom-up approach, eco-development, endogenous development, were brought along by the reformist paradigm (Browett, 1992). In rural planning context, it was very difficult to come up with an alternative paradigm. It should be noted therefore that the focus here has been shifted to look at rural development from within.

2.4.1 Redistribution with growth

The idea that growth could be combined with increased social justice, and had to be combined if the plight of the poorest was to be improved, was promoted by the World Bank (Harrison, 1983). In the 1950s and 1960s the bank was riding at the front of the growth bandwagon, lending heavily for large, often capital-intensive projects in power, roads and industry. It then tried to target many of its loan specifically to the poorest groups, the marginal farmers, landless laborers and shantytown dwellers, lending massively for rural development and the improvements of squatter areas (Harrison, 1983).

Harrison (1983) indicated that this new thinking on development emerged from the realization that despite the rapid growth in total national incomes in many developing countries, the poorest of the population were often not getting any better off, indeed in some countries were getting poorer. The benefits of growth

concentrated on the modern sector were not trickling down to the poor. The World Bank and the Institute of Development Studies at Sussex, England, therefore generated the new theory of Redistribution with growth. The aim of this development policy was to maximize the growth of incomes for the poorest groups in the medium term. In practice, this would mean a series of measures targeted to benefit the poor, from land reform to a shift in government spending on roads, power, health, education, credit and other subsidies, away from the cities and large-scale industry towards rural and marginal urban areas, small farmers and small-scale enterprises (Harrison, 1983).

2.4.2 The Basic Needs Approach and rural development

The Basic needs approach defines development in terms of the extent to which any given society can cater to the essential requirements of its population. These needs can be broadly cast into three categories: consumption goods, (food, clothing and shelter), basic services (education, health, access to water), and the right to participate in one's own development (Ghai, 1991). The basic needs approach regards the poorest sectors of the society as being those most in need.

2.4.3 Effects of the Basic Needs Approach in rural development

The effects of the basic needs approach were highlighted by Dell (1978) who indicated that the problem of ensuring that basic needs are met even among the poorest members of the community is very complex. The complexity is further strengthened by the meaning of the concept of the basic needs itself. For example, the concept of the basic needs changes its meaning across countries and even among the poor people themselves. In support, Potter et al (1990) argued that experiences suggest that reaching the poorest of the community directly is also very difficult. In this case, participation of the poor in decision making is always a formidable challenge. By contrast, Lee (1981) feels that, participation is both necessary and crucial, and that it is equally important that problems be

approached holistically, taking into account the full range of human and community needs and potentials.

At this stage, Lee (1981) argued that the problem is further complicated if we consider that reliance on standard macro economic instruments for redistributing incomes may not be sufficient employment at high enough wages to ensure effective demand for the basic needs consumption bundle. Furthermore, Aziz (1984) pointed out that conceptually, the acceptance of a basic needs approach to development can be regarded as a breakthrough but that by itself, does not provide a practical development strategy and a set of workable policies.

Lipton (1979) highlighted that the basic needs approach is necessary for rural development and a relevant anti-poverty strategy. He therefore argued vehemently for a combined force of both urban and rural areas in addressing the approach of basic needs. According to Lipton (1979) the basic needs approach is the only possible strategy that can be targeted towards uprooting and eliminating the problem of poverty in rural areas.

The approach, in its definition, has also identified the necessary conditions and strategies that are central to the problems in rural areas. However, the progress is triggered and guided by the manner in which the basic needs approach is applied. Nevertheless, the basic needs approach has suffered from different criticisms, it remained an import strategy with a vision to bring about sustainable rural development.

2.5 Bottom-up Approach

The idea of public participation in bottom-up approach is gaining much wider currency in all spheres. There is a growing consensus that rural development can be accelerated if the energies and resources of the people are mobilised, and that the poor have basic human rights-hitherto denied them by unequal power

structures to take part in making the decisions that affect their lives and livelihoods. It is affirmed that every effort should be made to secure the active support and participation of all segments of the population in the rural development process (Harrison,1983).

It is argued that rural development should occur at each stage of the development process: before, during, and after the goal and making the decisions that affect the community; in carrying out the plans; and in sharing the benefits. In decision-making, participation provides planners with much better information on people's wants and dislikes. It helps to avoid the kind of disastrous errors, failures and white elephants with which the history of rural development is littered, usually because the supposed beneficiaries were not adequately consulted (Harrison, 1983). Finally, participation can effectively contribute to rural development that is often in jeopardy in the Third World.

2.6 Eco-Development

One of the most distasteful aspects of the Western model of rural development has been its appalling arrogance, in the face of both nature and traditional cultures. Harrison (1983) argued that the rape of the earth has been central to the past progress of Western industrialism. The plunder and the waste of irreplaceable resources, the poisoning or destruction of fragile ecosystems, the belief that man can mould nature with no need to take into account nature's reactions to such a violation.

Harrison (1983:40) indicated that the concept of eco-development, or ecologically sound development, has been developed in the United States Environmental Programme. Its basic principles are simple: that development should respect the local ecosystem. It should conserve resources, using renewable resources where possible; it should minimise waste and recycles as much as it can; and should

respect local social and cultural patterns, by involving the local population in deciding on the style and pace of development.

In rural development, eco-development is not an easy strategy to carry out. It demands careful study of the local ecology of man and nature, and often there are not enough trained people to do this even for the major projects, let alone minor ones. Technologies for using renewable energy sources and conserving and recycling other resources are still primitive in rural areas. In addition, the problem with eco-development is the assumption that everything offered by the traditional culture, which is still much of the case in rural development today, is harmful. However, it can be argued that not everything in traditional culture is harmful: some practices such as destroying forests for firewood, or farming techniques that accelerate erosion, are as destructive as anything industrialisation can offer.

Apart from these quibbles, eco-development is no more than a sensible precondition of sustainable development. It asks no more than that we should live today with tomorrow in mind, that we do not snatch a momentary prosperity for ourselves at the expense of the very survival of our children (Harrison, 1983). Moreover, it swallows the fact that many people living in rural areas are faced with no choice but to clear-out forest for energy and other purposes.

Neo-liberalism and rural development

The Reformist paradigm with its international clamour was widespread but the results for rural development were more rhetorical than practical.

The main problem of the reformist paradigm was that it tried to close-up the gap between the developed areas (urban) and the underdeveloped areas (rural), instead of looking at the problems themselves. In rural development this idea was marked by absolute failures and this resulted to a further marginalisation of rural areas.

The failure of the reformist paradigm resulted in the shift away from rural emphasis to urban areas and the adoption of a city as an engine for economic growth was considered an alternative. The question of urban infrastructure and urban poverty received much attention. However, in the late 1970s a Neo-Liberal paradigm or the New Right challenged the Reformist paradigm. This has become the most recent and common paradigm and its minority has been experienced all over.

The implication in its use is that it is significantly different from the policies promoted by Milton Friedman and others of the Chicago school and which were, only a decade or so ago, termed monetarism. In fact, according to Magnus and Bjorn (1988) there is little or no significant fundamental difference between what is now termed neo-liberal and policies which have, at various periods over the past 220 years, been labeled, classic, neo-classic, liberal and monetarist. All are rooted, broadly, in the approach to the national economy advocated in the 18th century by the British economist Adam Smith.

The underlying thrust, of this policy of 'neo-liberalism', as indicated by Ghai (1991) is minimum state intervention in the economy and minimum regulation. This is premised on a concept, which probably held true in the relatively primitive conditions of Adam Smith's today, that the 'law of supply and demand' governing the market had a tendency towards stability and equilibrium, that is, that supply would simply expand to fill demand.

.7.1 Effects of Neo-Liberalism in Rural Development

The effects of Neo-Liberalism in rural development are huge. The reverse in emphasis from rural areas to urban areas, once again neglects the process of rural development. For example, since many private companies are located in urban areas, the emphasis on entrepreneurial development, further hindered the development of towns and urban areas, further marginalised rural counterparts.

While migration to the urban areas remained a major concern, male-absenteeism, land invasion in urban areas became major problems brought by the neo-liberal paradigm.

In rural development, neo-liberalism has been criticised for being “Smith’s invisible hand” and the idea that unfettered markets would ensure that the pursuit of self-interest would produce benefits for all. According to Ghai (1987), the surpluses evident around the World, accompanied by dumping, both through sales and waste and the intensified competition postulated in demands for greater productivity (that is, more goods at increasingly lower cost of production) show clearly that the system now has a tendency towards crisis and anarchy in relation to rural development.

Even though the Neo-Liberal paradigm remains a dominant paradigm, it is clear that the experiences of South Asian countries, such as Japan, Taiwan and Hong-Kong question its credibility as an appropriate paradigm for rural development. In the economies of these countries, the state plays a significant role through strategic intervention. But the strategic role of the state enables their domestic intervention to have international competitiveness in the global market (Harrison, 1992). This is also one of the major predicaments facing South Africa today. The emphasis on entrepreneurial development brought by neo-liberalism has a negative impact on rural development in that development is now focussing on urban areas. The application of neo-liberalism through Structural Adjustment Policies (SAPs) did not generate employment opportunities in many African countries. The SAPs as such have never been seen as successful in any Third World country.

It is not clear whether the weakness of the Neo-liberal paradigm is constructing a way forward to another paradigm for rural development. In the mid-1980s, the popularity of the idea of Sustainable Development was deemed to be a possible replacement paradigm for rural development. Although the concept of Sustainable

Development is not actually new, it was one of the major messages of the Cocoyoc declaration on environment and development in the late 1960s and early 1970s. The World Conservation Strategy (WCS) was also central to the idea of sustainable development in the 1970s (Pearce, 1987; 13). However it received its most popular exposition in the highly influential landmark publications and events called Brundtland Report, in 1987, referred to as "Our Common Future" (World Commission of Environment and Development, 1987:98).

2.8 Sustainable rural development

Haq(1995; 77) argued that in such a fragmented World of poor and rich, rural and urban, the concept of one World and one planet cannot be realised without some basic reforms. This perspective proposes that, without global sustainability, the idea of rural development will always remain an elusive goal. Explicitly, it is crucial to enclose the concept of rural development with a broader global perspective as 'sustainable development'.

According to the Brundtland Commission's definition, useful as it is, it is more a slogan than a framework for action. The Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs (De La Court, 1992: 789). However, the Brundtland Commission's definition begs more questions than it gives answers. What are the needs of the present and future generations, remains highly questionable. According to Haq (1995: 78), there is no easy or clear link between present and future needs. Nevertheless, the Brundtland Report also acknowledges these issues, but its definition of sustainable development is fairly static. For example, Barbier (1987:22) criticised the Brundtland report's definition as a means of encouraging resource depletion and environmental degradation.

In support, Haq (1995:79) argued that the concept of sustainable development should thus focus attention not only on the future but also on the present, because

there is something distinctly odd about worrying about unborn generations if the present generations are poor and miserable. This challenge is insisting that the current problems in rural areas are real and people should start to worry about them now by trying to envisage possible means of addressing them. It should not mean to spend more time and efforts attempting to solve the foreseen problems in rural areas, which may not even arise in future, but to begin to worry about the current problems facing rural areas.

2.8.1 Debates and strategies for sustainable development-rural development framework

The most popular debate on sustainable development, is the debate between the left and the right. The right views rural development in terms of 'sustained growth' while the left views it in terms of social development and thus an anti-growth perspective (Redcliff, 1987:18). In its general content and scope, the Brundtland Report is in the tradition of such publications as *The limits to Growth* by Meadows et al (1972). Its core message was that the enormous global economic expansion could not continue for ever and that the World would run out of the natural resources (De La Court, 1990: 10).

The Brundtland Report points out that the concern for sustainable development arises from the lack of the environmental awareness and from the unintended consequences of some forms of economic growth. It further argues that many forms of "development" erode the environmental resources upon which they must be based, and environmental degradation can in turn undermine economic development (Barbier, 1990 :43).

The "ecocentric" approach argues for the maintenance of the environment in order to bring about sustainable development (Barbier, 1990:33). However, there are fractions within the environmental concerns: Firstly, the deep conservative approach has been put forward by the "deep ecologist" who argue for a need to protect the physical environment from being degraded through human aspects,

whilst, the liberal approach argues that nature is about improvements in rural areas. The shift in emphasis to rural areas in particular, by the reformist paradigm made much theoretically input, but in practise it could not work. This paradigm was succeeded by the neo-liberal paradigm with a shifting away of emphasis from rural development to urban development and with a belief that the trickle-down effect would result. In practise, it did not make much difference from the other preceeding paradigms. However the trickle-down remained a pipedream and it further resulted in the marginalisation of rural areas. Although the sustainable development paradigm also made a significant input in rural development, its applicability remains under question marks.

Although these paradigm serve different specified periods and disband, their application takes various fashions from country to country. Therefore, elements of each paradigm can be useful in formulating a paradigm that can be suitable in South Africa (rural development in particular). It is also apparent that all the development paradigms that have evolved since the mid-century have had an impact on the structure of rural development in South Africa and elsewhere in the world. Hence, it should be noted that these paradigms change from time to time and their adoption requires careful evaluation.

2.9 Conclusion

This chapter starts by reviewing the concepts applied in the study. It discusses the development paradigms which have influenced development planning policies in South Africa. These are Modernization, Dependency, Reformist, Neo-Liberal, Sustainable Development.

The changes in development paradigmns have considerably affected rural development in Africa and South Africa in particular. In fact, they have not managed to provide solutions to the problems of rural areas. In South Africa the history of rural development was championed by the policy of

“ Separate Development”. Within the framework of regional planning in South Africa, betterment planning was introduced as a means to fuel this policy of “Separate Development”, but it failed to achieve rural development.

In the new South Africa the RDP in 1994 started to shape thinking about rural development needed in South African history. The RDP White Paper reflected an uneasy mix of strategies from strategies and recommendations for implementation. Nevertheless the RDP document have been characterised by vagueness as to how the overall programme would become an integrated and coordinated approach to rural development. The closure of the RDP office in March 1996 marked a shift to the new approach to rural development, that is, the National Government ‘s Macroeconomic Policy, called the Growth, Employment and Redistribution Strategy (GEARS). Both the RDP and GEARS, however, suffer the same fundamental weakness and have failed to set clear priorities for rural development.

CHAPTER 3

LOCAL AND INTERNATIONAL EXPERIENCE

ON RURAL WATER SUPPLY

3.1 Introduction

South Africa have much to learn from the international community in order to have a successful rural water supply programme. Section one of this chapter reviews concepts applied in the study and relates them to the South African context. Part two and three consecutively review related literature covering both local and international experiences.

3.2 Review of concepts

This section of the report deals with the review of concepts applied in the study.

3.2.1 Water: a basic necessity

Man as ruler and consumer on earth exploits all possible resources at his disposal in order to maximize his quality of life. In this process, he exerts a demand on all natural resources and combines them with his abilities as well as other assets, for his own gain or benefit. In this process, which is commonly known as the production process, various production factors (natural resources, labour, capital and entrepreneurship) are applied in order to generate a product or end- result. Water, as a natural asset, constitutes one of the most basic inputs in many production processes, is concomitantly a prerequisite for survival and forms one of the cornerstones of the quality of life. According to the constitution of South Africa (1996), it is every person 's right to have access to clean water.

Evidence is periodically collected and presented by the World Health Organization (WHO) that the vast majority of people in developing countries do not have what is considered in industrialized countries to be a basic necessity, that

is “reasonable access” to a “safe” water supply. “Reasonable access” to water in an urban area as defined by WHO includes, apart from household connections, also public fountains or standpoints located not further than 200 meters from a house. The definition of reasonable access used for rural areas is much less precise. It states simply that the “housewife or members of the house-in fetching the families water needs” (Saunders and Warford, 1976). A “safe” water supply is defined simply as uncontaminated water.

3.2.2 Rural

There have been many debates over the past few years as to what constitute the term “Rural” in the South African context. Because of the history of the country and particularly because of the policies of apartheid the settlement patterns of rural people have been substantially distorted.

The rural development framework (1997:5) defines “rural” as the sparsely populated areas in which people farm or depend on natural resources, including villages and small towns that are dispersed through these areas. In addition, “rural clusters” in the former homelands, that is, larger settlements without an economic base except for transfer payments, are also included.

For the purposes of addressing the problem of rural water supply and sanitation within the Department of Water Affairs. Rural is therefore defined as all areas in South Africa which fall outside of proclaimed metropolitan, municipal or township areas (DWAF 1994, p:6).

3.2.3 Rural development

According to the Rural Development Framework (1997) rural involves:

- Institutional development: helping the rural people set the priorities in their own communities, through effective and democratic bodies, by providing the

local capacity and access to funds for them to plan and implement local economic development;

- Investment in basic infrastructure and social services e.g. housing ,water
- Improving income and employment opportunities;
- Restoration of basic economic rights
- Resource conservation
- Justice, equity and security

3.2.4 Sustainable Water Supply

Definitions of sustainable water supply abound. Funding proposals often have a greater chance of being supported by donors if the term sustainability is used regularly throughout the text. Conferences on water often focus on sustainability, assuming the concept is clear and universally understood.

In South Africa, the term sustainable has tended to focus on issues of cost recovery above all else (Breslin, 1998b and DWAF, 1998a), and while cost recovery is an important element of sustainability, it is by no means the only component worth considering.

The plethora of definitions on sustainable water supply and sanitation however share a number of common characteristics. Characteristics that are applicable to both water supply and environmental sanitation as supplied by DWAF (1998a) include:

- **Benefits** - the potential benefits of improved water supply and sanitation are considerable. Benefits could include improved access to clean water for domestic and productive purposes, community and household health improvements, and reduced workloads for community members responsible for household water management, income generation, agricultural production, and animal husbandry. Households often have a clear vision of how improved water supply and sanitation systems can benefit themselves and their broader

community. Sustainable projects are most often those that continue to meet these perceived benefits over time.

- **Time** - water supply and sanitation systems are designed to meet local needs and demand over a prolonged period of time. The actual time a system is operational will obviously vary based on a range of factors including but not limited to system technology and environmental conditions.
- **Reliability** - sustainable systems provide a continuous service over time.
- **Maintenance** - a continuous service can only be provided if the systems are kept in working condition throughout the life span of the facility.
- **Utilization** - facilities should be used for their intended purposes, by all potential consumers, throughout the life of the system. For instance, a toilet that is only used by women and children will not achieve its full health impact unless men also use the facility. The impact of handwashing on household health will only be realized if all members of the household wash their hands after defecation and before handling food. Water collection points can become health hazards if stagnant water accumulates, or if people wash their clothes at a borehole site when the system was not designed to accommodate this local requirement.
- **Finance** - water supply systems require initial and recurrent finance in order to ensure their on-going operation. The technological and management systems chosen at local level must, in the end, “be within the financial means of whoever will bear the cost “ (WASH, 1993: 112). As will be discussed below, cost includes capital costs, operation and maintenance costs and replacement costs. To sustain a water supply system can vary, ranging from cost sharing arrangements with a government institution to full cost recovery from consumers.
- **Environment** - environmentally sustainable development has become an increasingly important consideration in development planning. The Brundtland Commission argued that sustainable development can only be ensured if it “meets the needs of the present generation without compromising the needs of future generations” (World Commission on Environment and

Development 1987). In terms of water supply, this means that “the water consumed is not over-exploited but naturally replenished” (Davis and Brikke, 1995: 6).

Definitions that are concerned solely with sustainable water supply also tend to focus on issues of water quantity and quality. In short, this means that improved water supplies should produce the amount of water required at local level and for which the system was designed over time. The improved water supply should also be of an adequate quality to promote good health and dissuade people from using unprotected sources of water for drinking and cooking purposes.

Recent research strongly suggests that health improvements, in terms of nutritional well being and reductions in child morbidity, is most pronounced when improved water supplies are linked to improved sanitation. More importantly, this research suggests that the health impact of improved water supply is limited when not linked to improved sanitation, and that increased quantities of water at household level have a greater impact on health than improved water quality. Consequently, international agencies are placing greater emphasis on linking water supply and environmental sanitation initiatives at the start of a particular project.

Finally, a growing development trend is to place sustainability of a sector-specific intervention - like water supply - within the broader context of poverty reduction. Progressive water supply projects are increasingly linked to broader poverty reduction considerations that “increase the economic and social well-being of the poor” (Pal, 1998: 457).

Unfortunately, water supply projects are most often implemented in isolation from other developmental possibilities and constraints. Improved water supply systems often fail because communities cannot afford to pay for the provided service over time as the Operation and Maintenance (O&M) costs escalate beyond the limited

(and often stagnant) incomes available at local level. As will be demonstrated below, innovative ways exist that link improved water supply and sanitation to poverty reduction. The spin-offs of such interventions can be considerable if practitioners can move beyond the limited viewpoint of water provision for domestic consumption.

2.5 Community participation

There is considerable debate about the exact meaning of the phrase “community participation”, in that, it represents different views, needs, implications and priorities. However, there is general agreement that basically community participation is an activity in which the community takes part in aspects and in decision making regarding issues affecting their living environment.

Community participation is seen as a process that seeks to address and ensure that the rights of individuals are respected. On the other hand it is a concept based on the first observation of individual rights but with own additional factors of empowerment of individuals (Daw, 1998).

According to Paul (1987) community participation refers to an active process whereby beneficiaries influences the direction and execution of development projects rather than merely receiving a share of project benefits. Wilcox (1993:50 in Abbot, 1996:120) amplifies Paul’s definition by noting that community participation is a process during which individuals, groups and organisations have the opportunity to become actively involved in a project. Here the emphasis is on participation as an active process where communities have real power to influence the direction and implementation of projects. As an active process, Paul suggests that participation aims to address the following objectives: Project cost sharing, improving project efficiency; increasing project effectiveness and building beneficiary capacity.

With regard to these objectives, the sharing of project costs can be achieved by the involvement of various legitimate stakeholders who have unique skills, knowledge attitudes and expertise to invest in the process. Since community participation is based on the premise that in a community there is knowledge, skills, attitudes and resources on which people can build (Ymker,1991 in Abbot, 1996:120), the role of development professionals or agencies involved in participation should, according to Watermeyer (1995 in Abbot, 1996:120), be to empower people to make better use of these human resources and to assist them to improve their quality of life. It is therefore through community participation that communities can be assisted by being enabled to initiate a process of development that meets their needs and aspirations, rather than being provided with ready-made development packages.

The primary aim of the participation process can be seen to be the satisfaction of a clearly defined need carried out in a way that contributes to the long-term growth of the beneficiary group (Abbot, 1996:120).

Community participation needs to be viewed as a process than a product. Thus the community involvement ought to occur throughout the planning process through thinking, planning, deciding, acting and evaluation, by that making it both a physical and mental involvement (White,1982).

3.2.6 Empowerment

Empowerment can be defined as a “processes whereby individuals achieve increasing control of various aspects of their lives and participate in the community with dignity” The ultimate stage is when local communities feel that they have the ownership of the project.

3 South African Context

To understand the current Water Supply policy in South Africa and its relationship to institutional framework, it is necessary to first understand the broader governmental context within which the key actors in the Water Supply sectors operate.

Part one of this section attempts to identify the main governmental and non-governmental players in these sectors. Thereafter it sets out the main policy documents affecting WS policy.

3.1 The provision of water in South Africa - before 1994

A rough distinction between water services provided to areas with and without established local government structures corresponds roughly to urban and rural-former-homeland areas respectively. In most urban areas, the local council acts as both the water service authority and the service provider, a linkage which is not often possible in the rural areas.

This serves as a general, however inexact, framework for a brief review of the water sector inherited by the ANC government after 1994. This is important, for it is with this heritage in mind that organizational restructuring must be understood.

3.1.1 Water provision in areas without established local government

These are the areas which are of greatest importance for this report, not only because they have the greatest need, but also because development in these areas is supposed to involve on-site projects, entailing extensive community involvement .

DWAF defines “rural” to imply areas without an established local council (DWAF, 1997b:1). This is important, for it is the absence of existing, or viable, local government structures that creates the biggest problems for development in the water sector in rural areas. In many of these areas, the former homeland governments once acted directly as service providers. Generally, they were inefficient, and - with the partial exception of Kwazulu/Natal - left little behind in the way of viable infrastructure.

According to the preliminary results of Census 1996, there are approximately 17 million people living in the rural areas, a deficit of 4 million when compared to the 1991 census results. This represents the poorest sector of society, with 60% of household earning less than R800, and 65% having inadequate access to adequate water supply (DWAF, 1997b: 9).

Access to basic sanitation is even worse, and a massive 95% of rural households do not have access to adequate sanitation, defined as a VIP toilet. Of this group, between 60 and 65% of households own unimproved pit latrines, leaving the remaining 30 to 35% with no on-site sanitation at all. Sanitation provision to organizations is equally poor. The Mvula Trust and the Water Research Commission estimate that 90% of rural schools, and 50 % of rural clinics are without adequate sanitation facilities (Palmer, 1995, I: 4-9).

3.3.1.2 Water provision in the former “homelands”

As noted above, most underdeveloped areas generally fall under the jurisdiction of the former homeland authorities. These areas are by far the least developed in South Africa, and have the greatest need today.

A typical legacy of homeland governments is the fragmented nature of service provision. Some homelands, like Bophutatswana, attempted to form a Rural Water Supply Programme (formed in 1989). For the most part, however, homeland water services were provided by a variety of different government

structures, generally operating either little or any coherent regulation and support, and with almost no monitoring of service standards and performance. In Kwazulu/Natal, these structures include Development Aid, Agriculture and Health, Joint Service Boards (JSBs), Water Boards, and NGO.

The homeland water service providers were transferred directly to central government, as opposed to the relevant provincial structures, in 1994. The infrastructure, which has been inherited, has been classified as falling into two categories (RDP, 1995:14):

- Isolated systems serving single communities (e.g. a borehole with only limited reticulation to standpipes).
- Extensive regional water supply schemes, which distributed water from a single source to up to 100 communities.

Both of these categories present different challenges for the water sector today. A large percentage of people in the rural areas rely on isolated systems for access to water. The government estimates that there were 5 000 installations of this sort in Lebowa alone, each of which cost between R5000 and R 100 000. Extensive regional water supply schemes, by contrast, involve considerable capital investment, and obviously present different possibilities for future development and organizational transformation. The former homeland of KwaNdebele, for example, invested R400 million in such a system, which served 500 000 people.

One of the biggest organizational problems facing DWAF is the integration of an estimated 26 000 (mostly unskilled) homeland officials. The absence of coherent HRD strategy makes this particularly difficult.

3.1.3 The provision of water in South Africa-after 1994

The two most fundamental changes in policy which continue to inform development in both the water supply and sanitation sectors are:

- a commitment to institutional redress and equality, typically expressed as “some for all,” rather than “all for some”
- A commitment to demand-driven development, in which, as the White Paper on Water Policy (DWAF, 1997a) puts it, “ the motivation for development comes from within the community, not from some outside agency.”

These concerns stem from a clause in the Bill of Rights, which insists that “Everyone has the right to have access to sufficient water”. In the aforementioned White Paper on Water Policy, this is interpreted very broadly to include the “right to sufficient water and food, and to health care services. Access to sufficient affordable clean water for hygiene purposes should be seen as part of the primary health care service” (DWAF, 1997a).

It is against this background that DWAF embraced the slogan “Some, For All, For Ever” as its motto. Rejecting the water use patterns of the past, where the bulk of what remains a scarce resource was used by those with privileged access to power, DWAF has committed itself to finding ways to distribute water to meet basic needs which is rightly regarded as one of the nations’ most urgent priorities.

The rider to this motto, “For Ever,” reflects an equally important commitment to better water management and conservation, as opposed to previous strategies which simply concentrated on increasing the number of dams able to store water. If anything, this is the most difficult of the objectives to achieve.

In order to understand the terms of water and sanitation policy and debates after 1994, it is important to acknowledge from the outset the intention to change the terms of water management at both national and local levels. For convenience sake, this might be understood as “top-down” and “bottom-up” concerns, which can be listed as:

- A commitment to central government ownership and control of all water resources, at all stages of the water cycle

- A constitutional obligation on local government to provide water to communities, considered as part of a demand-driven strategy

3.3.1.4 Water as a national resource: changing the terms of water management

Perhaps the key policy commitment which affects our understanding of water management in post-Apartheid South Africa is the idea that central government is to act as the custodian of South Africa's water resources, exercising its powers as a public trust. To this end, water is to be managed from a macro-social perspective, allowing the government to maximize positive externalities and minimize the fragmentation and overlapping jurisdictions which undermined water management in the past.

On the surface, this objective is laudable, and it would clearly be in everyone's interest to manage water in accordance with catchment patterns rather than artificial political boundaries.

Growing out of the commitment to national management of water, the intention is to treat all water as a common national resource. Practically, this implies that any water (at whatever stage of the water cycle) should be managed nationally (Fundamental Principles, Principle 2). One of the main implications of this is that private ownership of water is now prohibited (Fundamental Principles, Principle 3), as are permanent water use allocations and the riparian system of allocation whereby ownership of land adjacent to rivers confers right to use water in river.

3.3.1.5 International trends in the water sector

South Africa is not the only country restructuring its water service policy, or its operations and maintenance strategies; nor is it the only country insisting on extensive community participation in development and on demand driven service provision. It is therefore useful to briefly identify a few important international trends before we consider in more detail the strategies embraced in South Africa.

The Palmer Development Group provides a useful list of international trends in the water sector (Palmer, 1994b).

- A move toward integrated water cycle management
- Increasing separation of regulatory and operational responsibilities
- A move towards the decentralization of operations
- Increasing emphasis on public participation, especially on policy making and planning
- A move towards treating water as an economic resource
- Greater adoption of commercial management practices and techniques
- Increased private sector involvement

All of these concerns (including private sector involvement) have surfaced in policy documents. The call for public participation, for example, finds expression in the RDPs principal call for “People led development”, as do concerns to decentralize and restructure operations, management, and general policy making within the water sector. So too does government policy, especially with the introduction of the GEAR, reflect a tendency to treat water as an economic resource, subject increasingly to commercial management principles.

3.4 Understanding Government policy

Government policy on the WSS sectors needs to be traced through a number of key policy documents and recent White Papers on Sanitation and Water. However, the initial inspiration for this policy stems from the RDP whose principles - despite the demise of the RDP itself - continue to inform government thinking on WS delivery. All of the White Papers and policy documents in these sectors claim to give effect to key RDP principles.

3.4.1 The Reconstruction and Development Programme

Although no longer central to the state developmental strategy, it is important to begin the review of WSS provision by focussing on the RDP. As is well known,

the ANC government initially committed itself to the principles of the RDP - to a large extent, its election manifesto.

This had two important consequences for the WSS sectors, only the first of which is relevant today:

- the centralization of government funding as a means of parametric planning
- the formulation of key policy objectives to inform planning

Firstly, the RDP was intended as a means to coordinate centrally government developmental programmes, with the view to directing funding, via the RDP office, into those projects deemed compatible with RDP objectives (cf. ANC 1994). To this end, the RDP office was to act as the source of funding in the first instance for development projects, including WSS projects.

This strategy - a form of parametric planning, requiring extensive bureaucratic resources - soon proved unworkable, and the RDP office, and the commitment to end line budgeting, were scrapped.

The second and probably more important consequence of the RDP for the WSS sectors is that, despite the demise of the RDP office, development projects are still expected to conform to the general principles of the RDP. Although many projects do so nominally at best, the WSS sectors have made a sincere effort to rethink development - this includes technical and human capacity development, as well as operations and maintenance requirements - along these lines.

To this end, the RDP outlined six basic principles, all of which are (albeit to a different extent) applicable to the WSS sectors. These are set out as they appear in the original RDP plan (ANC, 1994:4-6). After each point, a very brief commentary is appended. Below we discuss the subsequent evolution of these points via RDP plans for WSS, and into post-RDP policy.

- Integrated and sustainable development. This implies the adoption of a comprehensive and global approach to development, as well as inter-sectoral and multi-tier government cooperation, as opposed to the piecemeal, ad hoc, approaches to development, which informed past government thinking. This has yet to occur, as witnessed by the poor integration between WSS and health sector planners (for a review, see Clacherty, 1997).
- A people driven process. This implies the active participation of communities in developmental projects, as opposed to top-down delivery strategies. This is perhaps the most important, yet difficult, objective to achieve. A substantial effort has already been made to facilitate this, however.
- Peace and security for all. This is fairly self-evident, and is not directly applicable as a development principle to the WSS sectors. Access to scarce resources (like water) in poor communities is, however, obviously related to questions of conflict and security management.
- Nation building. This implies that development should overcome the massive gulf which divides South Africa's "first" and "third" world sectors, a problem made that much more difficult in the water sector through the incorporation of ex-"homeland" infrastructures.
- Link reconstruction and development. This is a difficult principle to assess. On the one hand, it implies that those development projects should themselves serve as a stimulus to economic growth. This assumption is clearly central to all WSS sector thinking, and needs to be thought through carefully. On the other hand, it implies - or, at least, at the time at which the RDP was in vogue was understood to imply - a commitment to the philosophy idea of growth through redistribution. This controversial assumption is clearly absent from current economic policy debates on the water sector.
- Democratizing South Africa. This is the transformation of both state and civil society through the fostering of community participation in development projects. This too is clearly central to policy debates in the water sector.

Subsequent to the publication of the RDP Base Document (ANC, 1994), various plans specific to the water sector were issued by the RDP office. Collectively, these committed DWAF to “undertake a major new task,” namely to mobilize its resources and restructure its operations in order to provide “all South Africans access to basic potable water and sanitation services” (RDP, 1995:12).

3.4.2 Water Supply and Sanitation Policy White Paper (1994)

This is South Africa’s first national policy on WS&S. It introduces eight fundamental principles that inform a wide spectrum of water supply projects.

1. to provide job opportunities for the communities
 2. to develop skills within the communities
 3. to assist in developing the capacity of the community, e.g. to be able to operate and do basic maintenance on the project
 4. to re-orientate the Development of Water Affairs and Forestry and its agencies to shift their priority away from bulk supply schemes to supply disadvantaged rural communities, through a process of community participation
 5. to develop and support local authorities to operate and maintain water and sanitation services
 6. to coordinate provincial planning through the Provincial Planning Forum
- Furthermore, in order to facilitate popular participation in this type of development, it is believed to be necessary to develop the capacity of both governmental and community structures. To this end, the following objectives are added.
7. to develop structures to facilitate community involvement and capacity development
 8. To define the roles of the project Implementing Agent (IA) in terms which facilitate the realization of points 1 to 7 above.

According to the white paper, services should be self-financing at a local and regional level. The only exception to this is that, here poor communities are not able to afford basic services, Government may subsidise the cost of construction

of basic minimum services but not the operating, maintenance or replacement costs (P.19).

The basic minimum service is defined as: 25 litres per person per day within 200 m of the person's dwelling with the minimum water quality, availability and assurance of supply also being specified.

3.4.3 Water Services Act

The Water Services Act, 1997 (Act 108 of 1997) was signed into law by President Nelson Mandela on 19 December 1997.

Some of the objectives of the Act are to:

- Ensure and define the right of access to basic water supply and basic sanitation services
- Set out the rights and duties of consumers and those who are responsible for providing services
- Allow the Minister of Water Affairs and Forestry to set national standards (including norms and standards for tariffs) to ensure sufficient continuous, affordable and fair water services
- Promote, support and strengthen the capacity and authority of local government while creating mechanisms that will allow the national and provincial governments as well as consumers to monitor its performance
- Promote the effective and sustainable use of financial and natural resources
- Regulate contracts for the provision of water services to promote the fair and transparent provision thereof
- Create effective and financially viable statutory institutions to assist local government in fulfilling its obligations under the Act.

The Act aims to provide a developmental regulatory framework to the provision of water services by clearly defining the roles and responsibilities of the different spheres of government. This is done in a manner consistent with the Constitution,

while ensuring that the Reconstruction and Development Programme's (RDP) goal of achieving equitable access to basic services is achieved in an effective manner.

The Act further reflects the specific Water Law Principles relating to water services namely:

- Support for the rights of all citizens to basic water services
- The regulation of water services in a manner which is consistent with and supportive of the broader local government framework
- The provision of water services in a manner consistent with the goals of water resource management
- The protection of the individual consumer and the wider public and the promotion of the broad goals of public policy where water services are provided in a monopoly situation

The Act also introduces one of the mechanisms by which a committee of Parliament will have the right to review all the regulations made under this Act.

3.4.4 White paper on national water policy

The main emphasis of this policy is on the management of the country's water resources and proposes a framework for the regulation of the country's water resources. Some of the key proposals contained in the paper are:

- To abolish the riparian system of water rights, and introduce a system whereby water allocations will no longer be permanent and provision will be made to enable transfer of these rights between users;
- The establishment of water management areas, largely but not entirely catchment based, with the phased establishment of catchment management agencies, subject to DWAF authority and with priority areas targeted first, to undertake resource management in these water management areas;
- All water use, wherever in the water cycle it occurs, will be subject to a catchment management charge which will cover the actual costs incurred;

and where there are competing beneficial uses or where such use significantly affects other uses, the water use will be subject to an additional resources allocation charge;

- Existing water courts will be replaced with more appropriate legal institutions (possibly a specialised Natural Resources Court to deal with all natural resource and environmental matters); and river systems.
- To support the development of a system of international law to guide the management of shared

3.5 Institutional Framework

At this stage, it will be useful to outline briefly the roles played by each of these sectors, keeping in mind the important interdependencies between actors at the “top” and at the “bottom.” In “descending” order, these might be listed as follows.

3.5.1 Central Government

According to the White Paper on Water Policy, “ The management of water is, constitutionally, a national function, and the role of public trustee of our water resources ultimately, a duty imposed on national Government (DWAF, 1997a). In order to understand the role played by central government, it is necessary to bear two things in mind: the commitment to manage water resources as a public resource and the almost complete collapse in local government capacity throughout the country. Both of these add up to an enhanced role for central government, both as a public manager and as a development agent.

The main functions which central government is expected to take on might be summarized under the following headings:

3.5.1.1 Monitoring and Information Management Functions

This is perhaps the key role to be played by DWAF in facilitating transition in the water sector. The White Paper on Water Policy (DWAF, 1997a) lists these functions as:

- national design and co-ordination of monitoring programmes;
- development of technology and methods to support monitoring, assessment and auditing;
- standardization of approved methods and techniques for monitoring, analysis and assessment;
- regular review of regulations, standards, methodology and accreditation requirements;
- design, establishment and maintenance of national monitoring networks;
- Development and maintenance of information management systems.

3.5.1.2 Training and capacity building

As the reality of a rapid decline in local government capacity bears home, the need for national and provincial governments to take responsibility for local government training, and assistance where necessary is increasingly apparent.

The Preamble to the Water Service Act endorses this entitlement, and suggests that “although municipalities have authority to administer water services, all spheres of Government have a duty, within the limits of physical and financial feasibility, to work towards this object (DWAF, 1997b). Similarly, the White Paper on Water Policy suggests that “It is also the duty of the national and provincial governments to make sure that municipalities are effectively performing their functions, including the provision of water supply and sanitation services, and assist them to achieve this goal.”

Specifically, this has been interpreted to mean (DWAF, 1997a) that local government should be assisted to:

- carry out its water management functions; and
- to develop the necessary capacity for organizations to operate efficiently

However, the commitment to “people-led-development” extends beyond the role of local government, and enhancing the ability of communities to participate in projects. This implies the setting up of Projects Steering Committees (PSCs) and other community organizations (DWAF, 1997b:5). Both national and provincial government has a role to play in this.

3.5.1.3 Changing the terms of water resource management

As noted above, government is committed to shifting water management towards a regional and catchment management approach; and to the introduction of conservation as a key principle of water management. At a practical level, the White paper interprets this to include, amongst other things, the establishment of water management. Central government has the key role to play in facilitating both aspects of this.

At a practical level, the White paper interprets this to include, amongst other things, the establishment of

- **Catchment Management Agencies Committees (CMAs)**
The functions delegated to CMAs will depend on the specific requirements of particular catchment areas. However the CMAs are expected to be development in nature, incorporating all relevant stakeholders in a community. Where CMAs are in place, they will have an important role to play both in terms of facilitating community involvement, and in training and capacity building at regional and local levels.
- **Catchment management plans**
CMAs are expected to draft management plans. Whilst subject to the confines of the national framework, these plans will determine catchment policy for:
water allocations

- the requirements of the Reserve
 - international obligations
 - issues effecting water quality and quantity which require intervention
 - management goals for addressing the critical issues
 - potential management strategies and responsibilities for action to achieve these objectives
- Financial arrangements.

These plans in turn are being incorporated into the envisaged National Water Plan.

Government will retain responsibility for overall management of catchment areas.

Encourage integrated management

As noted above, the lack of inter-governmental, and inter-sectoral, cooperation is a real obstacle to coherent developmental projects.

One of the important tasks to be assumed by central government is to facilitate the development of a new management approach, which facilitates both vertical and horizontal integration of authorities and organizations involved in the water sector.

One of the key linkages which needs to be developed is the need to link the WSS and health sectors. The link between water and health is less obvious than the link between sanitation and health, but it is no less important.

The main actors at the level of central government might be listed as follows:

- The Department of Water Affairs and Forestry (DWAF)
- The Department of Housing.
- The Department of Land Affairs.
- The Department of Public Works.
- Department of Constitutional Development and Provincial Affairs.

3.6.2 Provincial Government

Provincial government is expected to assist in many of the coordination and managerial roles, as well as the promotion of integrated development of the WSS sectors, outlined in the discussion of central government. However ultimate responsibility for the management of water resources remains at the central level and province is expected to defer to this tier of government. In the Western Cape, provincial attempts to restructure service provision frequently incur the wrath of central government.

3.6.3. Water Boards

Most of the Water Boards have already begun to take on additional responsibilities, notably in the supply of water to rural areas and in helping to facilitate community-based development projects. Good examples of this trend include the Rural Areas Water and Sanitation Plan, managed by Umgeni Water, and the various projects managed by Rand Water's Community-based Projects Department.

DWAF (1997b: 5) suggests that, in addition to their current role as bulk water suppliers, the Water Boards might:

- act as agents to undertake basic services, receiving subsidies channelled via local authorities or water committees
- redefine their areas of supply to include previous homeland areas
- redefine their functions to include sanitation

Primarily because of the need to find viable, cost-effective mechanisms of delivery in the absence of efficient local government structures, the White Paper goes on to consider two possible options for the transformation of the Water Boards.

- Impressed by the cost-recovery and operational capacity of regional public utilities like the Water Boards, the White Paper proposes to investigate the possibility of establishing a national water utility to manage national infrastructure. The transfer of the functional component of bulk water resource development and operation to an organization managed on business principles could be feasible since most of the large catchment development and inter-basin transfer projects already operate on a cost-recovery basis and are financially viable”

3.6.4 Local Government

According to the Constitution, local government has the responsibility of providing water to communities. One of the reasons for this is the commitment to “people driven” development, which, as we saw earlier, rests on the belief that local provision of services is not only an instrument of democratic empowerment, but is also a stimulus to local economic development.

This responsibility for water provision includes not only development and maintenance of the water sector, but the maintenance of public health as well. In practice few if any municipalities are capable of meeting the first objective, and almost none have developed the necessary intersectoral collaboration to link the water and health sectors.

In reality, local authorities lack the capacity to do much infrastructural work themselves, and are dependent on outside assistance. Until competent local government is in place, provincial and national actors, Water Boards, and, increasingly, NGOs and private sector actors in partnership with Government will often manage water supply. This confirms the point raised above viz. the need to consider the interrelationship between “top-down” and community based service providers.

By and large, it is in the rural areas (which include most of the former “homeland” governments) that the biggest shortcomings are to be found. According to DWAF’s preliminary estimates, the total capital required to meet RDP defined basic needs is R5 150 million for water, and R3 650 million for sanitation (RDP, 1995: 15). For this reason, developing third-tier government structures and capacity in the rural areas is understood as a priority.

Since November 1995, two levels of local government have existed in all but one of the Provinces: district councils and rural or representative councils. In KwaZulu/Natal only regional councils (the equivalent of district councils) were formed.

However, as a recent review points out, before these councils can begin to provide water, provincial government must delegate specific executive responsibilities to them. In practise, “the current situation is typically that district councils have executive responsibility for service provision and little has been delegated to rural councils or representative councils” (DWAF, 1997b: 3-4)

3.6.5 Water Committees

In order to facilitate “people-led” development, DWAF emphasizes the need to create community water committees. There is no standard model of water committees, which might range between loosely constituted informal bodies through to voluntary associations and trusts enjoying powers.

In small communities, generally understood as less than 5 00 people, the ideal option is for a water committee to become the local service provider. In this capacity, it would enter into a contract with local government (or its equivalent). This will not only help to keep costs low but, because the service provider is now located within the community, will ensure greater responsiveness to consumer needs.

In large communities, it is not possible to use water committees as service providers, and either the provincial administration or, preferably the rural council, will have to play the role of service provider and service authority. In cases where the rural council enjoys the power to act as both a service authority and a service provider, DWAF suggests that it might exercise this latter responsibility in the larger settlements, and pass it on to water committees in smaller settlements.

3.6.6 Role of the Private Sector

Although water is to be managed as a national resource, DWAF clearly anticipates an enhanced role for the private sector. Even some of the earliest RDP documents on water provision call for the involvement of the private sector, as long as this contributes to the realization of overall government objectives. In 1995, the Water Research Commission released its “Preliminary Guidelines for Private Sector Participation in Water Supply and Sanitation Services” (WRC, 1996), and Water Services Act (DWAF, 1997f) have laid down guidelines for private sector involvement.

There are several competing pressures on the state to increase the role of the private sector.

These include:

- Realizations that state structures, at all levels of government lack the expertise and the capital to meet RDP objectives. DWAF seems singularly ill equipped to plan and to implement many of the ambitions objectives outlined in the RDP, and has already come under fire for its lack of managerial expertise. This pressure to turn to the private sector stems more from an act of desperation, than from ideological commitment.

- An increasing acceptance from within some sections of government of free-market policies and private sector provision as desirable objective. The endorsement of GEAR reflects the government's willingness to move away from many of its earlier statist policies. At the same time, important actors like COSATU have emphatically rejected the privatization of municipal services.
- A tendency from within other Departments, notably Constitutional Affairs, to endorse the privatization of state assets as government policy. This often results in contrasting approaches to water management: the decision to privatize water service provision in Nelspruit came from Constitutional Affairs, not DWAF (who do not appear to have played an important part in deliberation on this).

The private sector can play a number of different roles in the water sector. In some cases, it can act as the water service provider, whereas in other cases it might simply take responsibility for certain responsibilities or functions (DWAF, 1997b: 23). The latter scenario simply implies contracting out, which has always occurred. The private sector can act as a service provider. DWAF (1997b: 24) identifies a number of ways in which this might occur:

- Lease of concession arrangements. This is most appropriate for urban areas, in which outside organizations are brought in to provide the service in question
- Setting up local companies. This involves the establishment of companies by local stakeholders to provide services directly to the community.
- Private individual or company as a bulk supplier. In the rural areas, this often takes the form of a farmer selling water from a borehole to the water committee, who in turn act as the service provider
- BOT contracts. The intention behind the Build, Operate and Transfer contracts is for a company to build and operate a bulk water system - acting as water service provider - with the intention of transferring this to the water service authority at a larger stage.
- BOTT contracts. Conceived by DWAF as part of their community water supply and sanitation (CWSS) programme, the Build, Operate, Transfer and Train programme is the most ambitious, and controversial, private-public arrangement.

“ This arrangement does not require the contractors to raise finance or take financial risk and in the literature this would be referred to as ‘design, construct and operate’ contracts. Although the contractors are required to support the service provider with training for a period after construction has been completed, they do not become the service providers and thus this type of arrangement belongs with the ‘contracting out’ category.”

According to the Local Government Act, local government is allowed to enter into partnerships with a Private Operating Company (POC) in order to provide municipal services. Such partnership stops short of full-scale privatization, and plays an increasingly important role in water service provision.

One of the main private companies entering into such contracts, Water and Sanitation Services South Africa (WSSA), are already responsible for managing water and sewerage systems in the following towns:

- Queenstown, which entered into a 25 year partnership with WSSA in 1992
- Stutterheim, which entered into a 10 year contract with WSSA in 1993
- Fort Beaufort, which entered into a contract with WSSA in 1995

These contracts are described as “delegated management.” Unlike full-scale privatization, this entails the delegation of responsibility for the operation and maintenance of municipal services to a private company for a stipulated period. In this period, the municipality will retain ownership for all resources. In addition, the municipality will be allowed to monitor service provision and, most importantly, to continue to set tariffs.

Delegated management is said to transfer all the benefits of private sector management and control - i.e. increased managerial efficiency resulting in cost savings to both the TLC and the community, and the ability to harness the skills of specialists who would otherwise be unlikely to work for the public sector - without the loss of ownership and control or state resources.

The degree of private sector involvement obviously vary depending on the terms of the contract, and might involve vastly different levels of commitment and risk from both partners. Water Services South Africa provides a useful schematic overview of the different contractual options available. The transfer of ownership option is not, however, legally allowed in South Africa, as it is in countries like France, Belgium, and the USA.

3.7 Water Supply and International Experience

3.7.1 Introduction

Responding to the various needs of rural areas, the United Nations inaugurated its International Drinking Water Supply and Sanitation Decade (IDWSSD) in November 1980. This ambitious programme was based on premises that water resource development is integral to national economic and social development, and that access to safe drinking water and sanitation facilities are basic human rights (Buell, 1985). That rural development in general, and village water supply and sanitation in particular, are increasingly important objectives in developing countries is reflected in a significant shift in emphasis in policies of bilateral and international agencies.

Some of the many and complex reasons for the increasing attention paid to rural water supply, obviously include: a reaction to the phenomenon of rural to urban drift; improved communications make inhabitants of remote communities also aware of the facilities available to those living in urban areas and towns and other more privileged areas, and they exert pressure on their local representation of the people in the developing countries who live in rural areas, and it is important to politicians to let it be known they are doing something for this group.

At any one time the basic service target in the water supply field is the largest possible population with given quantity and quality of water, at the lowest cost. It

is generally accepted that the quality of service in rural areas can or should be less than in urban areas, the objective of serving the greater number of people per unit of investment can be relaxed by concentrating on lower quality service in rural water supply and sanitation. There is therefore a trade-off between economies of scale and density in urban areas and a lower quality of service in rural areas (Saunders and Warford, 1976).

The following resolutions were passed IDWSSD:

- All “men”, poor or rich, of whatever colour, have the right to be supplied with clean drinking water, with respect to quality as well as quantity, to cover their basic needs.
- It is recommended that all nations give priority to water supply and wastewater disposal.
- All governments of United Nations member states were requested to draw up programmes, enabling them by 1990 – if at all possible – to supply towns as well as villages with sufficient impeccable water.

3.7.2 Successes of the IDWSSD

The IDWSSD was neither a complete success nor a complete failure. The achievements of the IDWSSD as reported to the United Nations General Assembly at the end of the decade, showed that an additional 1 billion people in rural world-wide were provided with safe water supplies and additional 434 million were provided with adequate sanitation (Kalbermatten et al., 1992).

The goals, which were set at Mar del Plata, were only partly achieved because by the end of the decade there were still approximately 1 billion people who were unserved by safe water supplies and 1.4 billion who were unserved by adequate sanitation. This meant that at the end of the IDWSSD, one in every three people in the developing world still lacked safe and adequate drinking water and sanitation (World Water Institute, December 1990).

The IDWSSD experience showed that to supply everyone in the world, taking account of a rising world population growth rate, would require immense effort and commitment from the government of the world. To achieve full coverage by the year 2000 using conventional technologies and approaches would require five times the level of investment at that time (World Water Institute, December 1990). Even if the levels of investment could be met, there is no guarantee that quality of service and sustainability of the systems built would be achieved using conventional approaches. An alternative scenario would be to reduce costs through increased efficiency using new approaches to Rural Water Supply development and by the use of appropriate technologies. If costs were halved and investment doubled, full coverage could be achieved by the year 2030 (World Bank, 1992).

For South African Government to succeed, it is vitally important that the lessons learnt from initiatives in other countries are incorporated into any local RWS development program.

3.7.3 Lessons from the IDWSSD

Three major World conferences were convened to examine the experiences of the IDWSSD. The conferences were held in Recife, Abidjan and New Delhi. A summary of the lessons learnt and the policy statements emanating from these conferences is provided in the following sub-sections.

3.7.3.1 The Recife statement

In October 1988 representatives from the Latin American countries met in Brazil for the UNDP/World Bank seminar on water supply and sanitation for low-income populations. At the end of the seminar the "Recife Statement" was issued with the aim of transforming the health of the region's poor. The statement made

the following recommendations for the governments in the region (SALDRU, 1993).

- Take action to address the pressing needs of the low-income populations;
- Give priority to water conservation and pollution control;
- Adopt procedures facilitating popular debate before implementing water and sanitation programmes;
- Adopt low cost and simplified technologies to assure better and faster provision of improved services;
- Highest priority should be given to communities who have received little or no help thus far;
- Support priority should be given to communities who have received little or no help thus far;
- Support institutional development, training, fair tariffs and strict payment collection;
- Use existing infrastructure more effectively to attain more equitable sector services and postpone new investment;
- Establish mechanisms to ensure the participation of women at all stages of project design and implementation;
- Make use of existing information networks more effectively.

3.7.3.2 The Abidjan Accord

In May 1990, delegates from 45 African countries met in Abidjan, Ivory Coast. The aim of the conference was to formulate strategies to tackle the problems of meeting the Continent's water supply and sanitation needs of the 1990s. The delegates drafted a document entitled "Guidelines for the Development of Country Strategies for the 1990s".

Based on the lessons learnt from the previous decade the document suggested the formulation of a strategy that would help accomplish long term improvements in

the management and operations of the sector, increasing its efficiency and its ability to finance a greater proportion of investments from its own resources.

The recommended strategy to be adopted by the various governments should specify the following, (African Conference Statement, The Abidjan Accord, 1990):

- Effective demand should be the basis of project and programme design, in order to ensure the long term sustainability of supply;
- Credit and repayment mechanisms gradually leading to financial self-sufficiency of the sector must be established;
- Technology choice should be based on appropriateness and meeting effective demand at least cost;
- Training and applied research activities must continue to contribute to the development of appropriate technology;
- Community management of peri-urban and rural Water Supply and Sanitation is required to achieve long term sustainability;
- Hygiene education and the promotion of community participation should always be included in the development of peri-urban and rural WSS programmes;
- Replicability on a large scale is essential;
- Sensitization of communities to the needs for and benefits of improved water supply, sanitation and hygiene education is an important prerequisite of programme planning based on effective demand;
- Exchange of experience at a regional and national level should be encouraged.

3.7.3.3 The New Delhi Statement

At the “Global Consultation on Safe Water and Sanitation for the 1990s” conference held in New Delhi in September 1990, the United Nations

Development Programme (UNDP) presented the following eight key lessons learnt during the Decade (UNDP, 1990):

- Future initiatives must focus on poverty. It is generally the poor that remain unserved;
- Reaching these communities and sustaining services requires a special emphasis on helping them to help themselves;
- There is a need for governments to concentrate less on direct intervention in providing services and more on enabling public and private institutions to deliver them;
- Meeting demand requires a greater understanding of the household itself, its micro-environment, communications, decision-making processes, perceived needs and expectations. This aspect is essential in determining the level of service to be provided and maintained;
- The policy of free water has often failed. With government subsidies limited, emphasis on cost sharing has to be increased;
- Selecting the right technical option to solve the problem is one of the greater ways of increasing coverage, particularly when demand levels are correctly matched;
- Focusing on the role of women in the community as prime water users can enhance the sustainability of improvements in supply and sanitation services;
- Achievable targets have to be set. At current rates of coverage, the prognosis for extending water and sanitation services to the unserved over the next 20 years is poor;

Monitoring systems are a key part in this. Coordination must start at national level, with support from regional and global networks.

The participants of the conference drafted a statement, known as the New Delhi Statement. The statement consisted of a four-point programme for countries taking up the challenge “Some for all, rather than more for some”. The programme proposed four guiding principles:

- Protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes;
- Institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behavior, and the full participation of women at all levels in sector institutions;
- Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes;
- Sound financial practices achieved through better management of existing assets, and widespread use of appropriate technologies.

The successor to the IDWSSD was declared at the conference to be Safe Water 2000 (UNDP, 1990).

3.7.4 Key lessons from the IDWSSD experience

One of the most important contributions of the Decade was that it resulted in an improved awareness of RWSS issues and a better understanding of the mechanisms for achieving successful and sustainable projects. A number of key components were identified at all three conferences (Recife, Abidjan and New Delhi) as important for the successful implementation of RWSS development programmes, namely there was a need for:

- Targeting the poor;
- Targeting women;
- Institutional training;
- Appropriate technology;
- Community participation;
- Community management; and
- Cost recovery.

Much of the success during the decade in improving water supply coverage was achieved by using appropriate technologies and community-based approaches to projects (Kalbermatten et al., 1992). The conventional approach to infrastructural development adopted from urbanized, western, developed countries was found to be unsuitable because it was overly centralized and did not reflect local traditions and the needs for community participation. These and other constraints of the conventional approach to RWS projects are discussed in the following section.

3.7.4.1 Institutional Constraints

The realization that technological and institutional approaches imported from the “First World Countries” to RWSS projects were inappropriate was one of the main lessons from the IDWSSD. The general approach referred to here is that governments design and construct the systems in the conventional manner, using standard tender procedures, forms of contract and administrative structures (Green, 1995). This approach was originally developed for capital-intensive service delivery systems, and is unsuitable for community-based projects, which typically take time to develop because they require a high level of community involvement. Furthermore, the tendering system is geared towards getting the cheapest work possible in the shortest time, through incentives to cut costs and produce a tender in the quickest possible time, rather than on an understanding of the most appropriate structure required.

The result is that the contractor will stick to things he knows, as there is no incentive to innovate or suggest alternative methods of construction. There is also no forum within the system to include the contractor’s views. The contractor has no direct relationship with the beneficiary community. Thus the approach often promotes a conservative approach which may result in the implementation of systems that lack practical considerations. The sustainability of the infrastructure built also comes into question because the people involved in the design and

construction are not those who will eventually be responsible for operation and maintenance.

Despite the evidence of the IDWSSD inappropriate imported models are still prevalent in the RWS sector. This is because of a resistance to change that some analysts have called the “unintentional conspiracy” (Kalbermatten et al. 1992). Some of the underlying reasons for this resistance to change are:

- Engineers have been trained to design and apply sophisticated solutions. There is a serious lack of materials and training devoted to alternative and more appropriate solutions.
- Engineers tend to overlook aspects such as employment creation in low-income areas or the use of simple solutions so that local mechanics and suppliers can develop the capacity to provide maintenance and spares.
- Engineering fees are often determined in ways that do not minimize project cost (e.g. a percentage of the project cost).
- The design and construction specialists often push for higher standards to protect their reputations against the possibility of poor maintenance.

It may be necessary therefore for the pressure for change to come from the individual governments by way of legislation and monitoring. Many governments involved in the IDWSSD have adopted community participation approaches.

3.8 Local Agenda 21

The Earth Summit on Environment and Development in 1992 noted that water is needed in all aspects of life. Agenda 21 has pointed out that as populations and economic activities grow, water demands are increasing rapidly. The holistic management of freshwater as a finite and vulnerable resource, and the integration of sectoral water plans and programmes within the framework of national economic and social policy, is of paramount importance for action.

Agenda 21 identified four principal objectives to be pursued:

1. To promote a dynamic, interactive, and multisectoral approach to water resources management, including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic environmental and human health consideration;
2. To plan for the sustainable and rational utilization, protection, conservation and management of water resources based on community needs and priorities within the framework of national economic development policy;
3. To establish implement and evaluate projects and programmes that are both economically efficient and socially appropriate within clearly defined strategies, based on an approach of full public participation, including that of women, youth, indigenous people and local communities, in water management policy-making and decision-making;
4. To identify and strengthen or develop, as required, in particular in developing countries, the appropriate institutional, legal and financial mechanisms to ensure that water policy and its implementation are catalysts for sustainable social progress and economic growth.

3.9 Conclusion

This chapter discusses provision of water in South Africa during the apartheid and post-apartheid era. It looks at the current policies governing South African water supply and the institutional framework followed. The international experience is discussed and how this can be a lesson for South Africa.

The literature on international experience shows that although South Africa has much to learn it must consider its financial resources and the size of the

population in order to be successful. Whilst the basic framework for post-Apartheid WSS development might be traced back to the RDP, it is to the subsequent White Papers on both Water and Sanitation, as well as changes to Water Law and, by implication, the GEAR macroeconomic strategy document, that we must turn if we are to understand the details of policy. However, despite repeated assurances to the contrary, most of these documents tend to overestimate the capacity of the state and the various water services providers to carry out this transformation and to meet the extremely optimistic targets set. Much of the vagueness and lack of attention to the details of delivery, which characterized the RDP, is carried into these latter documents, notwithstanding their sensitivity to questions of capacity building.

This lack of institutional capacity has been recognized by government, and is regarded as one of the greatest obstacle to water provision, especially in the rural areas. More than anything else, it is this shortcoming (rather than ideological changes) that helps to explain the government's increased willingness to turn to embrace the private sector, and to use private sector professionals and NGOs in a variety of roles, from advisers to implementing agents. Increasingly the government has begun to experiment with outright privatization of water (as in Nelspruit).

CHAPTER FOUR

THE STUDY AREA – KUTAMA/ SINTHUMULE

4.1 Location

The information used in this document was sourced from the study by Frank De Villiers and Associates (1995) entitled Kutama / Sinthumule Socio-economic study.

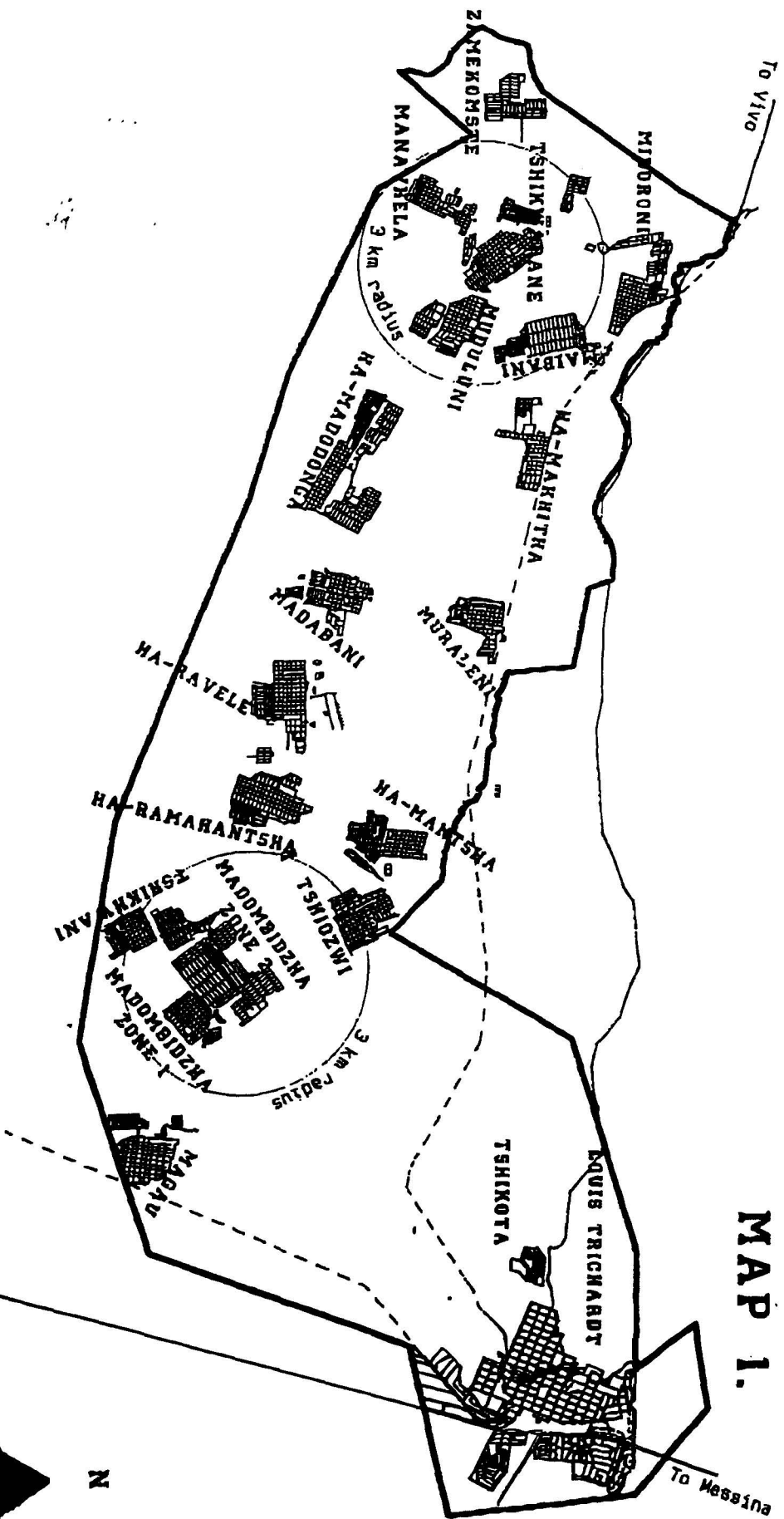
Sinthumule/Kutama forms part of the Dzanani District in the Northern Province of South Africa. The area formerly belonged to the Republic of Venda. It consists of two Chieftancy areas and is situated approximately 15km due west of Louis Trichardt (see map 1).

The area covers 19 000 hectares and stretches over a distance of 30 km from east to west. The Sinthumule Chieftancy area forms the eastern half and Kutama the Western half. The area lies to the South of the Soutpansberg and is accessible to Louis Trichardt and the rest of the sub-region by means of:

- the Louis Trichardt/ vivo road which crosses the area at Tshikwarani; and
- The main tar road straddling the area. Stretching from Tshikwarani in an easterly direction towards Madombidza and thus linking it with Louis Trichardt as the N1-route.

There are 18 settlements located in the study area of which 8 are located in Kutama and 10 in Sinthumule. Due to previous policies, the focus of development was to create an autonomous and centrally situated town in Sinthumule/Kutama. The population is spread over a distance of 30 km's, compounding the problem of bulk water supply. Sinthumule/Kutama relies on the services at Louis Trichardt.

MAP I.



SINTHUMULE/KUTAMA AREA
(INCLUDING LOUIS TRICHARDT AND TSHIKOTA)

4.2 Demographic characteristics

The figures that will be used in the following sections are taken from the household Survey conducted in the area in 1995.

4.2.1 Population distribution

The total population according amounts to 65 917 persons, of which 35 172 persons or 53,4% reside in Kutama. The annual population growth rate between 1985 and 1991 was markedly higher in Kutama than in Sinthumule and was respectively 5,9 and 3.8%.

4.2.1.1 Population distribution according to age and sex.

Some 46,7% of the population is 19 years and younger in age. The gender distribution in this age group is fairly equal although 47,2% are males and 52,8% females, suggesting that a number of males in the age group 15 to 19 have already left the area.

In the age group 20 to 65, the females are predominant, constituting 51,7%. This reflects that the extent of male migratory labor has already diminished and society is moving a “normalized” situation where the gender distribution is fairly equal. In many families, the father is absent for long periods and the discipline of and caring for the children are sole responsibilities of the mother. This in itself limits the mother’s time for economic activities.

4.2.2 Housing characteristics

The study area has a well-established area with most houses having 2,3 or more rooms (87%). Only a relatively small percentage, namely 12%, are representative

of 1 room hoes, giving an indication of the number of new families or small families with no more requirements residing in this area.

Most of the houses are built of modern materials (such as clay bricks, corrugated iron roof, etc). A small number of houses (mostly in the Kutama area) are still built from traditional materials.

4.2.3 Education levels

Approximately 20% of the population have no education at all and a further 54% have only a limited education of less than Std 8. This coincides with the high percentage laborers in this area. The advantage for laborers, however, is that they can work in any sector. The disadvantage is that they are restricted to certain low levels of income and upward mobility, in terms of their employment situation does not exist. Subsequently, the low levels of education underwrite the low levels of income and support the subsequent low affordability levels.

Only a small percentage (4%) of the population has tertiary qualifications. Those who do not have employment are forced to find employment elsewhere and eventually emigrate from the area. This will bring about a “brain drain”, not auguring well for a more capable community rendering advanced services to the economy of Sinthumule/Kutama/Louis Trichardt.

4.2.4 Transportation

The study area is effectively linked to Louis Trichardt (the major development made of this area) with a tar road stretching from Louis Trichardt to the Madombidzhana area, straddling the whole area and lining it with an alternative tarred route to Louis Trichardt (the route stretching from Louis Trichardt to Vivo). However the closest point to Louis Trichardt is approximately 15 km's and people are dependent on various modes of transport to reach Louis Trichardt. These

include a bus service as well as a number of taxis and private vehicles. Approximately 75% of the population dependent on bus and taxi transport. Only a relatively small percentage (17%) makes use of own transport.

It is evident that the population spends a relatively large portion of their time travelling and incurs high travelling costs. In view of the low levels of income, this has a restrictive influence on their ability to pay for other goods and services.

4.2.5 Food

Food is obtained through self-cultivation, buying or received as gifts/grants. Some people possess livestock such as cattle or goats, which provide meat and milk. Under the current drought circumstances, cultivation of own food is minimized. People are, therefore, dependent on the buying of food with their limited income.

The low-income level of the people results in the observation that 37,6% of disposable household income is spent on food and related goods. This has 2 consequences, namely:

- Only basic foodstuff like maize meal is bought, with a consequential limited nutritional value impacting negatively on the health of especially babies and small children. Malnutrition, and not so much (inadequate nutrition, is the result, and
- Limited income is available for the obtaining of other imperative goods, apart from food.

4.2.6 Water

Similar to the situation in the rest of the Northern Province and in large parts of South Africa, water is currently an extremely scarce commodity in the study area.

Before the current water project, water was mainly supplied through the eviction of standpipes, utilizing underground water resources through boreholes. Since standpipes are limited and boreholes run dry from time to time, women and children cover long distances and wait in queues to obtain water. Water is carried to their homes in a variety of containers.

Crop cultivation in home gardens is, therefore, almost none existent under current circumstances. The storage of water in substandard containers also leads to unhygienic conditions.

4.3 Economic development in Sinthumule/Kutama

Since Sinthumule/Kutama has a young population – some 46,7% of the population is 19 years and younger, a high dependency ratio is expected. The potential economically active population (all persons from 19 to 64 years) constitutes 47,6% of the total population. About 34,5% of the latter percentage are economically active, which reflects the participation rate. The employment rate is 16,3% and the unemployed constitutes 18,7% of the total population.

The major constraints on economic development in Sinthumule/Kutama include the following:

- Limited diversification. Sinthumule/Kutama's economy is extremely vulnerable, based on past performance. Apart from the role of the community and social services sector and agriculture (however small) has almost exclusively been the generator of Sinthumule/Kutama's economy. The vulnerability of the situation is currently portrayed by the extremely adverse effect of the current drought on the entire economy of Sinthumule/Kutama;
- The low level of economic development in the Sinthumule/Kutama region is in itself a constraint on the economic development of the region. The

substantial leakage of buying power is proof thereof. This is especially restricting to the potential for formal sector business activities to establish themselves.

- Water is a very scarce resource not only in Sinthumule/Kutama, but also in the broader regional context. The lack of adequate water for both human consumption and agricultural development in the past and will in all likelihood remain one in the foreseeable future. It also places a severe restriction on the provision of modern houses, as there is simply not enough water to sustain a piped water provision system;
- limited employment opportunities in Sinthumule/Kutama and the rate at which employment is created in the Sinthumule/Kutama region is negligibly small. Employment opportunities outside Sinthumule/Kutama in the Northern District are also inadequate to support the growing population of Sinthumule/Kutama. The consequence of this is that the existing physical and social resources remain under an ever-increasing pressure;
- Historical policies. The agricultural betterment policy as an example, resulted in numerous and dispersed settlements in the Sinthumule/Kutama region. The development at Ravele did not entice people to concentrate in that area;

4.3 Employment

Only 13 384 workers or 46,5% of the *de facto* labor force of Sinthumule/Kutama is economically active – that is involved in formal sector activities or “formally” unemployed. The latter are those actively seeking jobs in the formal sector and represent some 16% of the economically active population. More than 50% of the labor force is involved in subsistence agricultural, and/or informal sector activities.

The single most important sector providing employment is the community and social services sector which provides work for teachers, government personnel, etc. in Sinthumule/Kutama and in Louis Trichardt. This is followed by the Trade and

Accommodation sector reflecting employment opportunities in the business area of Louis Trichardt as well as the tourist sector. No other economic sectors provide substantially in terms of employment opportunities.

The agricultural sector provides a small number of employment opportunities. The availability of water and high rainfall could change this situation dramatically. It will, however, fluctuate from year to year unless a water source is guaranteed for this area.

The permanency of employment, couple with the low levels of income, is also an indication that upward mobility in terms of promotion is not possible and it is expected that the income levels of the larger part of the population will not increase substantially. This will reflect on the affordability levels of the community. The community should participate in a process to determine to what extent services should be upgraded.

The rather limited potential for further exploitation of the agricultural sector and the persisting drought will further restrict entrance to the agricultural sector. The community and social services sectors are already over accentuated and further creation of employment opportunities in this regard are doubtful. This means that the informal sector will remain to bear the brunt for future labor force entrants, even if the remaining kinds of formal economic activity should expand.

Apart from the existence of migratory labor, workers also commute to adjacent areas, where employment opportunities are relatively more available. These areas include Louis Trichardt. Even in these areas, the formal economy is not able to accommodate the labor force.

The above observations sketch a somewhat dismal picture. However, the labor force of Sinthumule/Kutama can be regarded as its greatest asset. Potential for further exploitation of the labor force of Sinthumule/Kutama is inexhaustive, provided its quality can be improved. In the field of appropriate education and training, much

more can be done to improve the quality of the labor force. The emphasis should, however, be on appropriate. How many funds are absorbed into “traditional” or stereotype education and training. The existing entrepreneurial talent must be exploited to its full potential.

4.4 Income levels and expenditure

The average monthly household income of Sinthumule/Kutama is R773,81. That implies a per capita monthly income of R362. More than one breadwinner could thus be responsible for a household’s income.

The level of income of members of a family depends on the type of work they do. A distinction could be drawn between permanent workers, temporary workers and seasonal workers. In general, permanent workers earn more money than temporary workers, while seasonal workers only earn money during certain periods. Furthermore, a distinction could be drawn between persons working in and around Sinthumule/Kutama and migrant workers, those working outside the area, mainly in the Gauteng area, and only visiting during holidays/weekends. The income levels of the migrant workers are usually much higher than those working in and around Sinthumule/Kutama. A contributing factor is the more accentuated role of labor unions in the metropolis, and their bargaining power in terms of wage negotiations.

The following deductions can be made from the expenditure patterns of a household in Sinthumule/Kutama.

- a large percentage of the income is used on food, which is characteristic of low income areas;
 - 8% is spent on improvement on homes (which coincides with the size of houses) and subsequently an upgrading programme seems viable;
 - inhabitants use a relatively large amount of their income to buy water at high tariffs, and they will subsequently be prepared to pay for water.

4.6 Conclusion

This section of the report described the study area in terms of; demography, housing, economy, food supply, physical and social infrastructure. It discusses these and relates it to how it affects water provision in the area.

4.5 The Kutama/Sinthumule Regional Water Supply Scheme

4.6.1 Objectives of the project

Following a request from the communities of Sinthumule and Kutama areas, the Sinthumule/Kutama Water Project was initiated as one of the Presidential Lead Projects in the Country with the main objectives being:

- Providing the communities residing in the area with an assured minimum supply of potable water at community standpipe level of service (25 litre per person per day).
- Providing employment opportunities.
- Providing training to facilitate upliftment and empowerment of the beneficiary community.

4.7.2 The area and beneficiaries

The Sinthumule/Kutama area is situated at the foot of the majestic Soutpansberg mountain range and covers an area of approximately 193 square kilometre. The area falls within the municipal boundaries of the Greater Louis Trichardt TLC in the Northern Province.

The 18 rural villages in the area have an estimated present population of 74 400 people with the number of households in excess of 13 500.

4.7.3 Milestone dates

A Project Steering Committee (PSC) comprising 11 community members and 5 other stakeholders' bodies, was constituted in November 1994 to oversee the implementation of the water project.

The Business Plan for this R48 million RDP project was approved in March 1995 followed by the appointment of the Consultant Team in May 1995. Construction started in February 1996 and the project was completed and commissioned in June 1998.

4.7.4 The Water supply infrastructure

4.7.4.1 Water supply zones

The water project area is divided into three supply zones as follows:

Zone A comprising 6 villages with an estimated present population of 26 600.

Zone B comprising 5 villages with an estimated present population of 20 200.

Zone C comprising 7 villages with an estimated present population of 27 600.

4.7.4.2 Water Source

Present total water requirements at community standpipe minimum level of service (25l/c/d) is estimated at 750 million litre per year.

To meet this demand, water for the foreseeable short term will be supplied from 19 production boreholes scattered throughout the area. Water quality problems (nitrates concentration in excess of acceptable maximum limit of 10 mg/lN) necessitated the introduction of service reservoirs and telemetry control for blending the water to produce an acceptable quality.

4.7.4.3 Bulk water supply infrastructure

Infrastructure required to supply water to each of the 18 villages consists of the following components:

- Electrical driven borehole pumping equipment delivering ground water to a central service reservoir in each zone, comprising a total of 19 pump stations with combined pumping capacity of 79 l/s.
- Main supply pipeline network consisting of:
 - Pumping mains from boreholes to service reservoirs in Zones A, B and C with total length of 50km.
 - Pumping mains from central pump stations at service reservoirs to elevated water tanks in Zones A and B with total length of 33 km.
 - Gravity mains from service reservoir to village connections in Zone C with total length of 16 km.
- Three reinforced concrete service reservoirs for blending of ground water; one in each of the three supply zones with capacities varying from 3 ml to 5 ml.
- Due to the topography of the area, elevated water tanks are required to all villages in Zones A and B while the villages in Zone C are supplied under gravity from the service reservoir at a suitable elevated point.
- Pressed steel elevated water tanks varying in capacity from 70 kl to 284 kl with a combined total capacity of 1 600 kl are provided at each of the 11 villages (one per village) in zones A and B.
- Supply to the elevated water tanks in Zones A and B, is accomplished by means of central pump stations at the service reservoirs in Zones and A and B, with installed capacities of 361/s and 231/s respectively.
- To achieve the required water quality through blending, the borehole delivery cycle, as well as the supply from the service reservoirs and elevated water tanks, is controlled by means of a radio telemetry system. The selected system is compatible with the system being used by Louis Trichardt TLC for ease of operation.

- Water from the boreholes is disinfected by means of gas chlorination installations on the inlet side to each service reservoir.
- Electricity supply to all borehole and reservoir pump stations, service reservoirs and elevated water tanks.

Village reticulation

Delivering water to the consumers at communal standpipe level of service, that is i.e. within 200 meter carting distance of any residence, is achieved by means of:

- Upgrading of the existing village reticulation
- Installation of new reticulation consisting of PVC pipework varying in diameter from 50 to 160 mm with total length of 178 kilometre.
- Possible future upgrading

All water infrastructure components have been planned and designed to allow for future upgrading to a higher level of service as well as to accommodate future water supply from possible alternative sources.

4.7.5 Employment creation

Labourers and supervisors were recruited from the local communities and trained to work on the 14 contracts under which the project was executed. Total employment opportunities created for varying periods of time during the construction period of 28 months included:

Labour – Men	:	1 760
Labour – Women	:	2 240
Supervising/Administration	:	210

In addition, four emerging contracting groups and several local subcontractors participated in the construction of the project.

4.7.6 Community awareness and training

A community awareness programme involving the Social Consultant and three Information Officers was conducted in the area for a period of 18 months in order to keep the community informed of all aspects concerning the project and to obtain feedback from the communities. The programme will continue for a period of at least 6 months after commission of the project.

Seventeen seconded personnel from the Department of Water Affairs and Forestry residing in the Sinthumule/Kutama area were trained by the northern Training Trust in the various skills required for the efficient operation and maintenance of the completed project under supervision of the Greater Louis Trichardt TLC.

4.7.7 Cost recovery

Recovery of operation and maintenance costs is done by means of standpipe prepaid water meters at an initial user charge of R4 per kilolitre amounting to approximately R15 per household per month. Consumers will be able to purchase water credits at vending stations in each village. The system will be operated, maintained and administrated by the Greater Louis Trichardt TLC.

4.7.8 Role players

Role players that were involved through the various phases of the project included:

- The Sinthumule/Kutama (PSC) consisting of 11 community members representing the beneficiary communities. The original chairperson of the PSC Mr Aaron Mambur, died tragically in April 1997 and was succeeded by the present chairperson, Mr Peter Magwala.
- The Department of Water Affairs and Forestry who financed the project and also acted in an advisory capacity.

- The Lepelle Northern Water as Implementing Agent.
- The Greater Louis Trichardt TLC as Operating Authority.

4.8 Conclusion

This chapter describes the study area, that is its location, demographic characteristics and economic characteristics. It goes further to describe the Kutama/Sinthumule Water project.

The discussion of the study area indicates that the future role of Kutama/Sinthumule and its expected level of growth , as well as policy with regard to the provision of infrastructure, will provide a model according to which water distribution should take place.

The low levels of income place a restriction on the affordability of the community to repay water provision systems.

CHAPTER 5:

INTERPRETATIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the results of the study, interpretation of the results, conclusions and recommendations for sustainability.

5.2 Presentation of results

This section presents the results of the study. The aim of the study was to investigate how to have more sustainable rural water supply schemes in South Africa.

5.2.1 Accessibility

90% of males say they get enough water, while only 80 % of women say they do. Of those who said they don't get enough water, 80% and 70% are rich women and men consecutively. Not everybody access waters at 200m distance which is an RDP standard, some access it further than this. The reason for this as given by engineers is that the topographical layout of the area prohibited them to provide equal distance.

5.2.2 Employment and Training

Some community members were employed during the project, mainly during the construction stage. This is also indicated by the interview with the local authority. 1760 of them were labour-men, 2 240 were labour women and 210 were employed in supervising/administration. The employment period during the construction period lasted for 28 months. These people were trained to work on the contracts.

5.2.3 Sustainability

90% of the respondents, both men and women say the source never fall dry but agrees that water points have broken down and the quickest repair made was over 5 days. 100% of them say they were never told that there would be no water during those days. Only 15% of the women interviewees say they know who to report to when there is a problem and 30% of men. They go to his home to report.

5.2.4 Affordability

80% of rich men and 60% poor know why they are paying for the scheme. Only 40% of poor women and 65% of rich men know why they pay. The poor women and men think it is expensive. If there is no water the people fetch water from their neighbors who owns private boreholes at 50c per 25 litres.

5.2.5 Participation

95% and 80% of rich men and women say decisions are made by the community whilst 60% and 50% of poor women say that project steering committee made decisions. No women were involved at most of the project stages except during construction as labourers. The PSC agreed that the tariff structure was decided by them without the community's concern.

5.3 Interpretation and Recommendations

Critics of the South African water sector often suggest that the underlying reason for project failure is the weak capacity of communities to manage these schemes at local level. Numerous agendas are cynically played out in this debate. Some, for instance, say that the private sector should move in and manage community schemes. The private sector, it is argued, will efficiently ensure that systems are operating and people are paying. The lure of this is unmistakable – cash strapped

districts councils are being enticed by the private sector with promises of reliable revenue from communities currently not paying for services.

Unfortunately, little discussion on the potential of higher costs associated with private sector involvement in cost recovery and (O&M) is being entertained. Consumers will obviously have to pay for comparatively high private sector overheads. They will also have to pay for the costs associated with long distances from towns to villages (often over poor or impassable roads to collect funds or provide O&M support) Profits will have to be worthwhile for the private sector to stay involved, again pushing up the cost of this service to poor households. Also communication difficulties may lead to long delays between O&M problem identification by users and problem resolutions. The limited or non-existent experience many of these private sector interests actually have in rural O&M and cost recovery should also be discussed.

The potential for local job creation in this service arena seems to be missing from the debate. Local job creation in this could have the dual benefit of creating meaningful jobs in areas with high unemployment rates while reducing the cost of the services provided to consumers.

The narrowly defined private sector argument may prove to be a false panacea in South Africa. On the other side are those who call for free water supply to all households. Water is a basic human right, this constituency of NGOs, politicians and trade unions argue. This position is justified on grounds of equity, development, and health.

The reality is that government cannot (and perhaps should not) finance this agenda. What is instead required are strategies to proactively identify and support households who genuinely cannot afford to pay for water. "All" will never receive free water, but some should. One of the challenges facing the sector may be to find creative ways for local government to support impoverished families without

unduly undermining local governments' own financial viability. As will be discussed below, many participants in the evaluations suggested ways in which local cross-subsidisation could assist the poorest households during this period of fiscal uncertainty.

Millions of South Africans will not have the luxury of waiting for the outcome of the “free water” debate. They will either have to find ways to pay for their existing schemes or will find that their systems become inoperable as government O&M subsidies are removed. Whether the “Equitable Share” can fill this void is uncertain, but the hard lesson in South Africa (and elsewhere) is that external subsidies are unreliable over time.

The real question for sector role players at this time is how to actually ensure that water supply is sustained in the context of poverty, limited finances and poor institutional support.

The cornerstone of the responses has been for strengthened and decentralised community involvement and management, **not** an abdication of these roles and responsibilities as both the “free water” and “privatise services” extremes propose. Ironically, decentralised O&M and cost recovery is consistent with international experience on these subjects.

5.3.1 Matters arising from the study

Importantly, the evaluation demonstrate the “training and capacity building”, (Empowerment) for community management has been token and ineffective to date. Unfortunately, given the weaknesses of the sector and the nature of the guidelines, many practitioners would concede that this claim is applicable to more projects. If true, it would be impossible to say that “community management” does not work in South Africa, as it has never been given a chance to work. This section of the report explores this argument by focusing specifically on the issues identified from the evaluation that is of affordability and technical design, operation and maintenance, cost recovery, water quality, and communication.

5.3.2 Affordability and Technical Design

Developmentally oriented engineering is based on a number of basic principles. These principles, at the very least, would include designing schemes:

- Where social, not technical considerations are paramount
- Where issues of affordability, appropriate and cost efficient technology are paramount.
- With consideration for O&M, and especially localised O&M
- Where water collection points take into account health considerations (like stagnant water eradication, erosion control, and ease of lifting of water container).
- That takes into consideration back-up systems that ensure an adequate supply of water while repairs to the main system are undertaken
- That emphasises access, distribution and collection rather than flow rates, pressures and storage.

Sadly, these engineering principles are absent from the project. Emphasis is unfortunately placed on adherence to guidelines rather than what is affordable and practical to these communities. Community involvement in designing the scheme or choosing the technology has been non-existent.

The evaluation has also highlighted the frustration that many community members feel with the current approach to water development in the country. PSCs consistently suggest that they are “merely rubber stamps for the engineers”, and say that discussions were never entertained on technology choice. And while estimated household tariffs are included in the Business Plan for this project, few in the community are aware of the financial requirement “their” scheme requires to remain operational.

Debates about cost recovery and community management must be linked to questions about affordability and design.

A number of options can be considered to address this problem. Community members have asked that they be trained in basic engineering quality control before engineers actually begin working in their village. This training will allow them to discuss technical issues with engineers without being overwhelmed by technical jargon and drawings. It seems that this request, if taken seriously and supported effectively, could only strengthen the process as a whole.

Additionally, community members suggest that schemes should not be implemented until there is broad acceptance and understanding of the cost implications for community members. Local discussions would have to include issues of cross-subsidisation to cater for the poorest households who cannot afford to participate in the scheme because of the cost.

A paradigm shift is also clearly required within DWAF and the engineering fraternity. Good practice should not be judged on who builds the most impressive technically sound scheme, but rather on who implements a scheme that is affordable and operational over time. Good practice should be judged on who finds the most creative ways to reduce the cost for consumers while increasing the amount of water available to the household. Good practice should be judged by including social as well as technical plans for upgraded services over time. Good practice values incremental improvements and increases in demand rather than the implementation of unaffordable schemes in the hope that someday consumers will be able to afford such a system. Payment to engineers should not be based on a percentage of the capital cost (which is an automatic incentive to increase costs) but on sustainability criteria.

Stemming from these conclusions is the need to rethink the technical guidelines in the sector. Guidelines have been adhered to as rigid rules, regardless of the intent.

Engineers are wary of moving outside the guidelines because client bodies will rarely accept any deviation from the guidelines. An alternative would be to develop guidelines that allow for, and actively promote, creative thinking and developmental engineering. Technical designs could be judged on whether the proposed is upgradable and sustainable. In reality, the laudable goals of the sector – 25 litres per person per day at no more than 200 meters from the homestead – will not be attained at this point in time in some villages.

Hard decisions are clearly required at policy level. Government actually has two choices. One choice is to continue to support schemes that are unaffordable, as is currently the case. In this situation, government will have to take responsibility for this decision. Subsidies will have to be provided until incomes rise in rural communities serviced by the state. These subsidies must be budgeted for openly, and not transferred to other ministries, like the Department of Constitutional Development (DCD), without that ministry's firm commitment to sustain the scheme.

Alternatively, government must decide that it cannot subsidise schemes over time, and accept that their guidelines will have to be modified with affordability issues at their core. The logic guiding the sector under this scenario would be that it is better to have a working scheme that does not meet current DWAF guidelines than a high tech scheme that collapses once external support is withdrawn.

5.3.3 Operation and Maintenance

Operation and maintenance (O&M) systems are generally weak at project level. Moreover, training programmes have, for the most part, been targeted at a handful of local community members (often pensioners, almost always male) whose main responsibilities revolve around the management of the engine and the reservoirs. This demonstrates a somewhat narrow view of O&M. O&M includes everything from water point management to broad, multi-community support systems (Davis

and Brikke 1995). O&M systems should be designed with such considerations in mind. Rarely has this occurred at project level, according to the results from the evaluation.

- Community member participating in the evaluation consistently discuss their difficulties with O&M issues. Who does one contact when there is a problem at the tap?
- Why is the system not operating today, and when will it be on-line again?
- Why does it take so long to fix the problem I reported? Why are we not getting water while the taps across the road are flowing?

During evaluation sessions, participants were asked what they would do to resolve the problems they face with O&M. The consistent call is for a more decentralised O&M system, with greater responsibilities for household members utilising taps. Such a system would include a range of responsibilities for people at tap level. Participants consistently argue that tap level O&M should include responsibilities like:

- Replacing broken taps
- Fixing blocked soakaways
- Repairing eroding tap location or pedestal
- Ensuring tap area is clean
- Locking tap or managing the collection of water at collection points

Participants most often argue that payment for materials (like taps) or completed work, (by the “Tap Co-ordinator”) should come from households utilising the tap(s). This ensures both rapid responses, payment upon completion of work, and accountability to the customers.

At a broader, community-based level, another tier is discussed. This tier would be responsible to the block/tap O&M structures, but would be primarily responsible for:

- Operating the engine
- Basic maintenance of the engine
- Repairing the engine as required
- Repairing broken pipes
- Cleaning reservoir(s)
- Maintain the reservoir(s)

Training at community level would also focus on strengthening the capacity of community level O&M operators to identify and respond to emergent problems, even if these problem were beyond the capacity of the community to address.

Community level responses to emerging O&M problems can at times, be delayed because water is still flowing. This is understandable, because access to alternative supplies of clean water can be limited.

Better preventative maintenance may nevertheless occur if roles and responsibilities are shared at village level, as suggested during this evaluation. O&M should not be the responsibility of one person, or handful of people, but rather the responsibility of all participating households. By broadening responsibility, one may find that the pressure to keep the system running (even when it should be repaired) will diminish, preventative maintenance at tap level improves, repairs occur timeously, and the operating cost to the household declines. “Ownership” of the system is consequently deepened.

The evaluations do not have a great deal to say about the multi-village support structure required to assist community-based O&M schemes. This is again understandable, as previous homeland models were not necessarily envisioned by participants in the evaluation.

Despite this limitation, a number of insights can be gleaned from the decentralised O&M systems described above. First, it is clear that many participants believe

that O&M responsibility should be shared. As a result of this, the designed support structure should compliment, not stifle these community-based objectives.

Second, evaluation participants consistently claim that O&M should be responsive and accountable to their needs. Some people felt that the O&M operator should be replaced because he did not respond to their demands timeously, or because he did not complete his job to their satisfaction.

This principle would need to be applied to the multi-village support structure under consideration. The danger is that a structure is set up that is only accountable to the Water Service Authority in the area. This would, over lead to despondency and frustration at local/tap level. Accountability must be to both the WSA and the local communities this support structure services.

Finally, many people suggested that the potential for job creation through O&M had not been realised. Pensioners have a reliable source of income. Why, it is often asked, are long-term jobs not targeted at poorer community members who need the income?

Again, this argument could be extended to the development of O&M support systems. Multi-village O&M support services should, as much as possible, be linked to the issue of local economic development. CBOs, SMMEs, and local NGOs could be mentored into this role over time. Local jobs can be created, and income can remain in local areas instead of being channeled to corporate headquarters in larger towns or cities. The spin-offs for longer-term local development could be significant.

Creative strategies to support the decentralised O&M systems being proposed on the ground are required. And the potential benefits of such an approach could be considerable. One may discover more responsive and effective O&M, lower O&M costs which would subsequently reduce tariffs and free up scarce household

funds for other uses, increase the job creation potential in an area, and enhanced ownership of the existing schemes by consumers.

5.3.4 Cost Recovery

Debates on sustainability in the South African water supply sector have concentrated almost exclusively on cost recovery (Breslin 1998b). The reason, at one level, is clear. Levels of cost recovery at project level are generally very low, and almost always below what would be required to sustain the specific water project.

This is not unique to the study area only. A recent DWAF survey of 12 water projects that **are collecting** sufficient revenue begins with the shocking admission that the study's original terms of reference had to be modified because "it proved difficult to identify enough truly successful rural systems to draw any meaningful conclusions with confidence" (DWAF 1998a: 1).

A number of reasons for this problem have been proposed. As suggested above, the issue of affordable design must be considered when initiating this debate. Participatory exercises at field level suggest that there are many households who will never be able to pay the current tariffs due to poverty (Breslin, 1998a; and Ninham Shand, 1998).

Others, including many community members who participated in the evaluation, believe that strict enforcement of payment is required. They call for water meters so that water collection points can be monitored for use, and bills drafted accordingly. People who do not pay could then be stopped from using the scheme.

The other argument is that the RDP levels of service do not meet the standards expected at community level. As a consequence, people do not pay. People want yard connections and will pay for them, it is claimed (Dreyer, 1998).

There is no doubt that people want yard connections, and that water projects should include basic features to allow for upgrading (like distribution mains) over time. There is also no question that the sector should creatively support efforts to bring water into the yard or house. This makes sense for developmental and health reasons at the very least.

The question is how to do this in a sustainable way, so that the desire to provide better access to water is not undermined by issues of cost and O&M support?

Progressive water supply projects could, in the future, be designed and implemented with long-term strategies for yard (and house) connections, regardless of how rapidly the sector decides to move towards higher levels of service. Therefore, the reticulation could be upgraded incrementally to yard connections. Hilderbrand (1999) demonstrates a variety of financial options that are available to support community initiatives for higher levels of service.

Demonstrating payment over time is clearly missing from the debate. The case is best illustrated in this project. People have never paid for water, yet they claim “if you just give me a yard connection then I will pay”. Dreyer (1998) finds similar responses in areas where people are not paying for their existing schemes, although they are paying for other services like electricity.

This is music to the ears of many water sector programmers because it meets an expressed need on the ground and addresses the enforcement issues discussed above. It is argued that non-compliance will be an issue of the past as payment for yard connections can be enforced.

Unfortunately, this issue is not well thought out, on at least two levels. In an environment where communities have basically received free water, there are no consequences for the response communities not take this opportunity to call for yard connections given the history of subsidised water in the country? Surely the

challenge is to get communities to **demonstrate** payment rather than **only** relying on “willingness to pay” surveys or word of mouth.

The second reason why the issue of payment and yard connections is problematic relates to affordability. Yard connections may lead to easier enforcement of payment, but if households cannot pay for the water, or reduce quantities to a very low level, then the overall objectives of improved water for all will be lost. Health benefits will be negligible, and massive investments in the sector will be unutilised.

The issue of affordability must again be reintroduced. The poorest households who cannot afford even the current communal level of service will have to revert to unprotected water sources or be forced to purchase water from richer consumers at exorbitant prices.

In the end, a successful project as the **management** of cost recovery still remains. As suggested earlier, committees – across the board – have not been equipped to address the problem of cost recovery over time. Why is this?

The evaluation results suggest that financial training has focussed on bookkeeping training rather than concentrating on the critical (and broader) issues of financial management. To collect funds on an on-going basis means that committees have to address problems including but not limited to:

- How to collect fees from hundreds of households distributed over an often-vast area on a regular, monthly basis. This requires not only administrative skills but logistical capacity.
- How to deal with defaulters
- How to identify and develop strategies to support people who cannot afford to pay (for example, this could include people who will never afford to pay or people who are unable to pay for a short period of time because of a short-term financial problem, like a death in the family)

- How to bill property, and in a way that a wide range of households – both literate and illiterate – can understand and trust
- How to ensure that enough money is collected to cover running costs
- How to recalculate the tariff if prices for items like diesel increase
- How to communicate the above information to community members in a way that is understandable to all
- How to manage the accounts in a transparent way so that community members trust that the funds collected are used for the intended purposes (this issue should not be underestimated as many communities have historical experience in the theft of money from community bank accounts)
- How to deal with periods of financial insecurity in the community, like before school starts

Unfortunately, the training programme in the project has not touched on these critical issues of long-term financial management. The committees are ill equipped to address the problems of actually running a project once the external support is withdrawn. The issue of cost recovery is further complicated by the fact that external subsidies have kept projects alive for long periods of time. Reversing this trend will be complicated and time consuming. Simply shutting off the system will be counterproductive, especially in villages where systems were put in place that are clearly unaffordable.

One response to this problem (and the problems of O&M discussed above) will be to say “see, communities cannot do this. The government or the private sector must take responsibility for local financial management”. This statement is misguided, and undermines the development projects. This view is also contrary to the views of those who participated in the evaluations.

How can this issue be solved? In areas where external support was limited, committees have been trying to address the problem of cost recovery by decentralising the financial collection aspect of their project to people at

household level. The models vary – some have set up “tap co-ordinators” who are responsible for collecting money from all the households using a single tap; still others have set up sub-committees responsible for 2-4 taps; still other have set up ward committees responsible for an entire section of a village.

The committees are now realising that it does not matter to them how much each house pays, but rather whether the money required to run a particular tap, or a set of taps, is collected. So, for instance, if it costs R70 to provide water to a particular communal tap (including O&M costs). It really does not matter whether every household pays R5, or some pay R10 and other nothing, or one house pays the full R70. For the committee, all that matters is that they need R70 from that tap. This trend is very consistent with international experience in cross-subsidising infrastructure at community level. Importantly, this is also much more manageable for all concerned at project level.

Perhaps the lesson for the future is to consider exploring with communities (not just committees) what they think will be required to run the programme once the consultant leaves. In addition, sessions could be facilitated that explore how local people think a system can be structured to make this process as easy and transparent as possible. Who would be involved? Would they get paid? How will they be chosen? What support is needed, if any? How will “report-back” be ensured? What will be the relationship with the Local Authority (who pays Eskom, or the employees on the scheme for instance)?

The sector may also want to consider creative ways to introduce communities to different collection systems like the ones described above. The evaluation results suggest that communities can come up with these strategies. Space should therefore be given to local communities to design financial management and cost recovery strategies that they trust and can operate, rather than imposing unworkable systems on them as has been the case to date.

5.3.5 Water Quality and Health

Water supply is, in the end, a health intervention. If this issue is not taken seriously then the developmental role of the sector must be questioned. The health and hygiene education components of this evaluated project – and many others – are uninspired and ineffective. The idea that a “community” will address health-related problems at the village level after a bland lecture from someone involved in health is misguided. The health impact of evaluated water supply projects has been negligible for several reasons. First, water quality tests at project site often demonstrate high levels of contamination. The primary reason for this is poor O&M. In the future, O&M training should include issues of water quality and water collection point hygiene (keeping taps clean, keeping areas around taps free of stagnant water and rubbish).

Second, water collection points are, in general, poorly designed. Soakaways are absent from many collection points. Taps are located in depressions that allow stagnant water to accumulate. Tap design does not take into consideration issues of water haulage. Erosion at collection points is common, and pedestal design is of low quality.

The easiest way for engineers to promote health at project level is to design water collection points with health considerations in mind. This means designing standpipes that address problems of stagnant water and erosion. It means developing water collection points that can use grey water for other purposes (like water for plants and animals).

It also means that the physical health impact from water collection needs to be considered in the design of the standpipe. Back, leg, arm, neck and spinal problems could be avoided if standpipes were designed to minimise the strain of

lifting full water containers from the ground to the preferred mode of transport (wheelbarrow or head, for instance). Ninham Shand (1997) developed a document entitled “Design of Water Delivery to Reduce Health Risks”. This report provides effective guidance to those who want to contribute to the resolution of this problem. Unfortunately, this report, which was commissioned by NaSCO, has not been made formal policy by the necessary departments within DWAF.

Localised health education programmes need to be developed to compliment water sector work as well. These programmes need to move away from generalised health messages (as is currently practised to limited effect) to the complicated issues of behaviour change at community and household level. Projects should identify one/two locally specific water – and sanitation-related behaviours that are undermining household health. Meaningful health education interventions should then focus on demonstrating improvements in the identified behaviours at village level. This will not be accomplished through community lectures but through sustained contact with communities.

6 Community Participation

An important finding that emerged from the evaluation relates to community participation. Communication is generally very weak throughout the project cycle, and is a contributing factor to sustainability problems on the ground.

Committees seem to host community meetings every so often, but the meetings are variably attended and community meetings are not really an effective way to communicate with people. Messages are often misconstrued, or forgotten, or lost in the mass of their information.

The evaluations suggest that poor communication has tended to be around issues like:

- Technical design

- Cost implications of “choice” (communities clearly have little say over choice)
- Financial management
- Progress reports
- Health and Hygiene
- O&M

One of the strongest recommendations to emerge from those relates to the tariffs. Community members are told to pay a certain amount, but they are unclear why the fee is set at that rate, and what the money covers. Does it simply pay for water use, or O&M costs, or repair requirements, or salaries (who is getting a salary and how much are they paid)?

In some cases, the problem relates to differential tariffs in different villages. Communities are unclear why they are paying higher tariffs than neighbouring villages (this local perception could be inaccurate, but because nobody clarifies the situation this issue becomes more accepted at local level). Strategies to address this issue will be critical, especially as the sector tries to develop multi-village support systems and area-based plans.

Another issue to be addressed that may be relevant to this is that when community members are asked what kind of information they want to know and how often they want to know it. There has been surprisingly similar answers with communities and across projects. The information requested thus far is:

- If water stops flowing, why has this happened and when can households expect the problem to be resolved? This information is wanted immediately after a problem arises.
- How much money is required to pay the bills in a given month? This information is wanted each month.
- How much money was collected to meet these bills? Again, this information is wanted each month (for the previous month).

- What was the money collected used for (basically a financial breakdown)? Again, information wanted each month.
- People often say they do not feel it is necessary to go to a community meeting to find this information out. The “tap co-ordinator”, sub-committee or other decentralised structure can inform households in their areas.

The challenge again is to support this process/request. Can simple, user-friendly and perhaps visual reports be designed by local people to meet this need? This issue is also important because individual members of a community will engage with the programme, or not engage with the programme, based upon their experiences with past development outsiders and programmes.

Related to this are two additional issues that the sector may want to consider. First, as suggested above, the issue of transparent and accountable financial management is not some idealistic aim of outside development practitioners. It is critically important to many local people who have painful experiences of losing money that was put in community accounts for development work. Cash contributions for seed and fertiliser have disappeared. School funds have vanished. Deposits for materials have been “misplaced” or are “unrecorded”. The list is actually quite long. The second issue relates to the committees. As argued in this report, community managed water supply is faltering because communities have not really been equipped to address the long-term issues of cost recovery, O&M, technical design, health and communication. This puts committees in complicated situations, as residents often blame the committee for the problems of a project.

At times, the complaints have merit, but in other cases these complaints are unfair. Committees are often formed without any understanding of their expected roles and responsibilities. These problems not only leave the committee isolated (and at times physically threatened) but also feed into the distrust of the process. “They are just like the public works committee ...” it is argued.

The evaluation strongly suggest that a greater emphasis on the history of a community (social, economic, technical, and environmental) may at least alert project and implement agents of possible problems to avoid, or even positive experiences that can be harnessed in the new project. This knowledge may, in the end, enhance the chances of project sustainability over time.

5.3.7 Gender Issues

The role of women during most of the stage of the project was generally limited. This is also indicated by the number of women in the PSC and the positions they held. This is similar to other DWAF Projects in the Country.

Water is traditionally defined as the preserve of women. To ensure the participation of women in water projects and to avoid male dominance in water projects DWAF should shift its emphasis to the domestic nature of water provision. This can be done practically in several ways. For example the Project Development facilitator could emphasise the fact that water is a 'women's issue' and that women know more about water than do men. As a result men in the community are likely to permit women to take the lead and withdraw to a large extent.

The main reasons that male participants become involved in the previously defined domestic issues of the water project, is the identification of employment, money and technical matters. These are issues that one mutually defined as male responsibilities. The Project Development facilitator should therefore rather 'emphasise the primary water provision benefits of the project, as opposed to the secondary benefits such as employment and skills development.

5.4. Conclusions

This chapter discusses the problems contributing towards non-sustainability of rural water projects. It suggests ways to overcome these problems.

The evaluation strongly suggest that a greater emphasis on the history of a community (social, economic, technical, and environmental) may at least alert project and implementing agents of possible problems to avoid, or even positive experiences that can be harnessed in the new project. This knowledge may, in the end, enhance the chances of project sustainability over time.

The perspective has been, as much as possible, from the eyes of community members trying to make their water supply work, that more, not less, responsibility and control should be directed towards community-based structures, and that greater consideration should be given to decentralised water system management. This also suggest that top-down approaches to sustainability, like the recommendations contained in DWAF's "Sustainability Management Guidelines" should be profoundly reconsidered (DWAF, 1998b, second Draft).

Two key issues also emerged that should be considered. The first relates to monitoring and evaluation (M&E). The sector's almost total lack of M&E has proven to be crippling. Many of the problems identified would have been addressed as they emerged if an effective, outcomes oriented M&E system was in place. The fact that so many of these problems have festered over time will only complicate efforts to redress the sustainability issues identified above.

CHAPTER SIX:

OVERCOMING CONSTRAINTS TO SUSTAINABLE RURAL WATER SUPPLIES

5.1 Introduction

The continent of South Africa and the rest of the developing world is littered with failed “good intentions” implemented by highly qualified engineers, economists and development “specialists”. The failure rate estimated by the United Nations Development Programme’s 1993 World Development Report is at least 80%.

In the case of South the failure can be due to amongst others, development approach and the role-played by Planners and other development professionals.

6.2. Integrated development

Rural development is a highly complex social and economic phenomenon. Although the provision of water to a village or rural community is normally regarded as first priority, it should not be seen in isolation from other services. Project managers and administrators should always bear in mind that the main issue in rural areas, irrespective of the service or services being provided at that point in time, is one of development.

The issue therefore is rather to consider the contribution that an upgraded water supply system can have on the total development or upliftment of the local community. In this context development should be defined as viewed from the locals and not only as perceived by the standards of the industrialized or first world, or as seen through the eyes of the Project Manager.

The supply of water to rural areas should be considered to be only part of the development programme, and not the end goal in itself. Infrastructure provision does not lead to development on its own; on the other hand development can not take place without the necessary infrastructure in place. The timely and correct implementation of other services such as electricity and roads could act as the triggering mechanism for development to start and grow in momentum. Therefore an integrated development approach should be adopted.

4 The role of a planner in water provision

The role played by a planner is important in the delivery of water services. Questions arise as to what exactly is the role to be played by a planner. This question leads one to strengthen some roles played by the planner in detail. The planner, as s/he promotes participation, s/he must be able to build capacity and adopt a facilitative role. Therefore his/her role especially in the facilitation of effective process of water delivery will be examined further as this is important aspect in the development planning. As a facilitator s/he plays a role of a communicator. S/he identifies the problems of the community and chooses the method of solving the problem.

Turner (1972) states that “the new roles are based on services to those in greater need and on attitudes and values of co-operation and accountability to community groups and clients, rather than on accountability to traditional employers and to peers in the profession”

4.1 The Planner as a Facilitator

The planner as a facilitator attempts to develop a democratic mode of planning and aids in conceptualizing a water project. In the past planning in south Africa has excluded community participation, so the situation is different, democracy has ensured participation. A planner must encourage participation advocate a people-

driven water provision, liaise between the community and other stakeholders, identify and refer possible resources to community structures translating technical information and assist with the establishment of community structures. The role of the planner should not be avoided because conflict is bound to occur. Planner can help in solving the problems.

Participation which empowers communities to control projects is critical in facilitating sustainability. Community control is achieved through community structures, normally assisted by an outside facilitator i.e. the Planner. Through this structure the community can initiate demands, define their own goals, assess options, and finally assume responsibility for the required actions to implement the chosen option. Some authorities also report that the ownership of the completed project assets is an important aspect of control and hence sustainability.

3.2 Planner as an Advocate

Like a legal advocate who would plead for his own and his own client's sense of legal priority or justice, the planner must plead for his own and his client's view of the good society. In his advocacy the planner should represent, and be responsible for, his/her client. This does not mean that the planner should not seek to persuade his client. It is his/her role, just as a legal advocate would conduct a cross-examination, to point out the nature of the bias underlying information presented in other plans. The planner must make it a point that s/he educates and, informs the community about planning issues, water and related policies governing water provision in South Africa and proposals. On the issue of values, the planner must make his views very clear.

3 Planner as Mediator

In many instances conflict occurs between the community itself. The planner must then intervene and listen to different views of the people to help in resolving the conflict. Conflict has been reported in the study during the project between the

traditional leaders and the TLC. This conflict is said to be one of the factors contributing to non-sustainability of the project. The Planner in this case is needed to resolve this conflict.

5.4 Planner as Participation Promoter

The planner should empower the community and ensure that there is full participation from the community. If participation is achieved, consensus could be reached about what level of service etc people needs. However participation by all people is not possible, but if people are involved in the process they would want to come forward and those who were silent in the past will be heard.

To agree on the empowerment process it is important that the key role players meet and agree on the essential elements which must be fulfilled to ensure sustainability. These key elements should include soft elements like capacity building and training as well as hard elements like operational, maintenance and cost recovery requirements. Thereafter it is necessary for the role-players to agree on the allocation of responsibilities in manner which ensures that all have a clear understanding and acceptance of who is responsible for what, when things are to be carried out and to what standards they are to be carried out. This seems not to be done in the case study.

Such community empowerment builds self-reliance and autonomy at the community level. The ultimate question then becomes how much autonomy is desirable at this level? Hodgkin (1994:12) replies that communities should be given or take as much autonomy as they can assimilate, but that no community can be totally self-sufficient. Each community will still have to interact with government authorities and to rely on other outside assistance, that is, the Planner to meet some of its needs.

Apart from capacity building and training, ongoing governmental extension services and private sector interventions are likely to include health and hygiene

education, supportive management monitoring and performance auditing, and information and decision-making support system that is accessible to all without restriction, and interventions associated with major maintenance work, as well as droughts and other disasters.

6.6 Conclusion

Hyden, in *No Shortcuts to Progress: African Development in Perspective* (1983:94-95), challenges us to understand the limits of what can be achieved by government agencies both centralised and decentralised. Therefore, (pp.95 and 113), apart from encouraging the promotion of genuine community involvement, he also advises that the primary tier of local government should be at village level, that all levels should be administratively simple and that such institutions should be build from the bottom up. He goes on (p.122) to advise governments to give more attention to developing structures outside government into which public sector institutions can meaningfully plug their own inputs. He claims (p.132) that a growing number of responsible politicians and officials in Africa realise the long-term benefits for their countries of a strategy that strengthens the private and voluntary sectors. He is not talking of weakening government structures.

However, he does see a need for sustainability reforming them, loosening control, and strengthening the feedback mechanism that increases the potential for self-regulation and direct participation at local levels in forms consistent with the development of society at large. Such a reorientation, he claims, is not likely to come about as a result of training aimed at strengthening policy-making capacities in individual government departments. The only way it can be realised, he says, is by allowing groups in society, through intermediary non-governmental organisations, to exercise pressures in such a direction.

It is not a question of agreeing which structures such as village committees, local government, or private and voluntary sectors should be supported, but of agreeing

how these structures should be supported and by whom. For example, will DWAF continue to play a meaningful long-term role in supporting village committees or will it gradually hand over this responsibility to local government by ensuring that local government has been empowered to take over responsibility for this task?

Hodgkin (1994:28) reports from his own experiences that sustainable development has two distinct phases. The first requires the establishment of institutional capacity and a base of experience without which an understanding of the needs of the sector is difficult. The second phase includes planning, implementation, evaluation, feedback, and revision. The whole process can take nearly 10 years and one of the most damaging mistakes which can be made by project facilitators and financiers is to refuse to make long-term commitments in support of their water activities.

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APPENDIX A

KUTAMA / SINTHUMULE REGIONAL WATER SUPPLY

INTERVIEW WITH OFFICIALS (1999)

1. General	
Question	Answers
Estimated Number of Households in Project Area?	
Estimated Number of Households Served by Water Project?	
Starting Date of Project (tick one)	1994 /1995/1996/1997/1998
Completion Date of Project (tick one)	1994 /1995/1996/1997/1998 In Progress
Initial Budget for Project	
Final Cost of Project	
2. Background - Interviews With Local Authority	
Question	Answers
Was there a PSC active on the Project (tick one)?	1. Yes _____ No _____
If yes, was Local Government representation on the PSC (tick one)?	2. Yes _____ No _____ 3. Not Applicable _____
Is there a Water Service Provider, in terms of the Water Services Act, in place (tick one)?	4. Yes _____ No _____ 5. Do not know _____
What type of Water Service Provider is in place (tick one if applicable)?	6. comm.-based/WC _____ 7. Local Gov. _____ 8. Water Board _____ 9. Private Sector _____
If there is a combination, who is performing which function (indicate whom for each answer)?	10. Management _____ 11. Operations _____ 12. Maintenance _____ 13. Financial Admin. _____
Is there a cost recovery plan in place at community level (tick one)?	14. Yes /No/Do not know
Has Local Government decided upon a tariff structure for this project (tick one)?	15. Yes /No/Do not know
If yes, what is the tariff structure (indicate amount and how often it is collected. Example: R5/month)	
Does Local Government believe that the tariff structure has been communicated effectively with the community (tick one)?	1. Yes /No/Do not know
Does Local Government receive external support for the water project (tick one)?	1. Yes _____ No _____ 2. Do not know _____
What Kind of Support is Received (tick all relevant answers)?	3. Financial _____ Training _____ 4. Technical _____ Health _____ 5. Sanitation _____ 6. Other (specify) _____
Who is providing the support (tick all relevant answers)?	7. DWAF National / Provincial 8. DCD National/ Provincial 9. District Council _____ 10. Other (specify) _____

3. Background – Technical	
Question	Answers
Type of Source (tick all that are appropriate)?	1. Borehole/Prot. Spring/Well /Bulk Supply /Offtake – River _____
Energy Source (tick all that are appropriate)?	2. Handpump /Diesel /Wind/Solar/Electric/Gravity _____
Water Collection Points (tick one)?	3. Communal /Yard /Both _____
How many yard connections, if any, have been made?	
Was the system designed to accommodate yard connections?	1. Yes /No /Do not know _____
Is there a monthly record of Water Consumption (tick one)?	2. Yes /No/Do not know _____

4. Background – Financial/Labour	
Question	Answers
How much should households pay/month for water supply per the design of project?	
How much money must be collected each month for the project to be financially viable per the design of the project?	
Required Compliance Rate for project viability per the design of the project?	
Is the cost recovered per month sufficient enough to compensate running costs (tick one)?	1. Yes _____ No _____ 2. Do not know _____
How is water charged for (tick all that are appropriate)?	3. Pre-Paid Meter _____ 4. Flat Rate _____ 5. Meter Reading _____ 6. Water Vendor _____
Is Government subsidising this project at present (tick one)?	7. Yes _____ No _____ 8. Do not know _____
Was Government O&M Subsidy planned as part of the project (tick one)?	9. Yes _____ No _____ 10. Do not know _____
Type of Government Subsidy in operation now (tick all appropriate answers)?	11. Payment – operator _____ 12. Payment – energy _____ 13. Payment – repairs _____ 14. Payment – other _____

INTERVIEW WITH THE PSC OR WATER COMMITTEE		
Number of members	Female	Male
1. WHAT TYPE OF TRAINING DID YOU RECEIVED	1.financial management 2.project management 3.bookkeeping 4.monitoring of maintenance and use 5.organising people and conducting meetings 6.reporting skills 7.supervising technical works other:	

Members ' Comments:

Training

Project

General:

Observations

QUESTIONS ; TRADITIONAL LEADERS

COMMENTS ON THE PROJECT IN GENERAL:

Positive:

Negative:

Suggestions:

KUTAMA SINTHUMULE REGIONAL WATER SUPPLY SCHEME

HOUSEHOLD INTERVIEW

Household NO: Male ☐ Female ☐

Income Level R0-R500 R500-R800 R800-1200

1. Accessability

*Do you get enough water Yes No

*If NO, how far do you access the water

200m 300m 400m 500m

2. Employment

Were you employed during the construction of the scheme ?

Yes No

*If YES are you still employed Yes No

*How much were/are you paid.....

3. Training / Skills Development

What skills did you acquire

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

4. Sustainability

4.1. Reliability and Operation and Maintenance

*Does source sometimes fall dry Yes No

*If it dry where do you get the water
.....
.....

*Has this water point ever been broken down? Yes No

*If yes, what was the quickest repair made ?
.....
.....

*And the longest
.....

*How many days was water not available over the last three months

1. 0-03 days
2. 0-4days
3. over ten days

*Were you told why there was no water during those days Yes No

*If YES, how were you informed ?no yes

Do you know who to report to when there is a problem? Yes no

If yes How -----

4.2. Affordability

* How much do you pay for the scheme ?

*Do you know why you are paying that amount ? ..yes.....no.....

If yes what it is.....
.....

* Do you think it is expensive ? Yes No

*If YES how will you afford to pay ?
.....
.....

*If water is not available from the scheme where do you fetch water ?
.....
.....
.....

*How much do you pay for that ?
.....

4.3. Willingness to Pay

Are you satisfied with the following :

* Access to services Yes N

* Sufficiency of Water Yes No

* Regularity of the scheme Yes No

* Predictability of the scheme Yes No

* Adequacy of operations and maintenance Yes No

* Fairness of fees paid in comparison to service received

* Accountability of service delivery

Are you currently to pay for the services Yes No

If no, why
.....
.....
.....

4.4. Participation

*Who makes decisions in the village ?
.....
.....

*Give type of decisions made.....
.....
.....

were you involved during the project? Yes no

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

*At what stage of the project were you involved ?

Initiation , Choice of Technology, Level of services

Chioce of Operator , Tarriff structure etc.

If yes how?

4.5. Interviewee's Comments

4.6. Observations

* Technical design

* Health Issues

* Other