A COMMUNITY-BASED APPROACH TO RURAL WATER SUPPLY AND SANITATION: THREE CASE STUDIES

by

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The views expressed in this work should in no way be interpreted as being a reflection of the opinions of the CSIR but the author.

ABSTRACT

Community-based approaches are of fundamental importance in the development of rural water supply and sanitation.

Three case studies demonstrate that, by means of negotiation, need assessment, community participation, community-based management and appropriate technology, a reasonable degree of success can be achieved in providing an adequate and safe drinking water supply to most unserved communities.

The research also shows that necessary negotiations with the government are often more complex and time-consuming than those with the community itself. Either the weight of bureaucratic processes or the lack of capacity and willingness on the part of the government to implement small-scale water projects using community-based approaches, were the reasons for the complexity of negotiations in one case study.

It was also found that self-initiated projects with strong back-up support from development agencies are more successful than are projects initiated from outside. It was also noticed that community-based management is feasible and that it can lead to sustainable development.

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ACRONYMS

The following is a list of important acronyms used in this thesis:

ANC	African National Congress
BDC	Bolobedu Development Committee
BOUTEK, CSIR	Division of Building Technology, of the Council of Scientific and Industrial Research
BWCC	Bolobedu Water Co-ordination Committee
CODESA	Convention for a Democratic South Africa
DBSA	Development Bank of Southern Africa
DDA	Department of Development Aid
HSRC	Human Sciences Research Council
IDWSSD	International Drinking Water Supply and Sanitation Decade
ITSIDU	Intermediate Technology and Small Industries Unit
KDA	KwaZulu Department of Agriculture
KDH	KwaZulu Department of Health
LDA	Lebowa Department of Agriculture
LDC	Lebowa Development Corporation
LDEAP	Lebowa Deparment of Economic Affairs and Planning
LDH	Lebowa Department of Health
LLA	Lebowa Legislative Assembly
NDC	Ndwedwe Development Council
NPPHC	National Progressive Primary Health Care
PRODDER	Programme for Development Research
RDP	Reconstruction and Development Programme
SAB	South African Breweries
UW	Umgeni Water
WATERTEK, CSIR	Division of Water Technology, of the Council of Scientific and Industrial Research

1.1 STATEMENT OF THE PROBLEM

Healthy drinking water is a basic need and an essential ingredient for sustainable rural development. Because of this, water supply and sanitation must form part of any primary health care strategy. In the developing world, the only water obtainable in most rural communities is usually poor in quality, accessible only with difficulty, and available only in inadequate quantities.

In response to its ambitious but challenging goal of providing all people with a convenient access to drinking water supply and sanitation, the International Drinking Water Supply and Sanitation Decade (IDWSSD, 1981 - 1990) achieved a reasonable degree of success. Nonetheless, it is estimated that, of the total 5.2 billion people in the world in 1990, almost 2 billion people drink water you would not use to wash your car, while another 1.2 million wish they had that water to drink (Schalekamp 1990: 19). Although much has been achieved in supplying good quality water in the past 13 years, all efforts in this direction need to be intensified if the problems are to be solved by the year 2020 (Schalekamp 1990: 19).

In South Africa alone, approximately 10 million rural and 4 million urban fringe informal settlement inhabitants do not have access to safe drinking water (Still 1992: 1). However, because most of these settlements are near urban townships, it is hoped that informal settlement communities will soon gain access to potable water. This, however, leaves rural communities with little hope of improvements in their water supply unless special provisions are made (Still 1992: 1).

1.2 RELEVANCE OF THE STUDY TO SOUTH AFRICA

In spite of three decades of investment in rural development, no significant improvements in the quality of life have been recorded in South Africa (Swanepoel, 1988: 1). The devastating drought of the early eighties and subsequent cholera outbreak have emphasized the inappropriateness of the approach which accompanied investment in rural development. Furthermore, the receptive areas for water and sanitation-related disease, as identified in Epidemiological Comments (1980; 1981; 1982; 1983 and 1984), are mostly situated within the relatively underdeveloped black "homeland" areas in South Africa (in Mills 1987: 2). During the period between 1980 and 1987, 25 251 cases of cholera epidemic were bacteriologically identified. The case fatality rate in this regard was 1.4%. Outbreaks occurred in the summer rainfall season. The vast majority of patients were black South Africans living in rural areas with an average annual rainfall in excess of 600 mm (Epidemiological Comments 1992: 5). No cholera epidemics, however, have (at the time of writing) been proven in South Africa since 1987 (Epidemiological Comments 1992: 5).

Apart from cholera, other water-borne diseases such as typhoid and diarrhoeal infections, are still posing a major health hazard in some parts of South Africa. In their study of the 1970 mortality data of the population groups in South Africa, Wyndham and Irwing (1979: 800) considered the death rate of Coloured and black infants and children to present a major health problem. Infants are especially vulnerable to these diseases. This is shown by the high infant mortality rates of the 0-1 year and 1-4 year age groups of Coloureds and blacks in 1970.

Despite the 1992 reports which indicate that the country has been free of cholera since 1987, Wilkinson (1993: 132) reported a total of 46 confirmed cases of cholera in the Hlabisa Health Ward, KwaZulu in 1993. Upon

investigation, it was established that the affected people came from rural areas where access to safe water is almost negligible and use of toilets is rare. Because of this, Wilkinson (1993: 133) recommends that, in the longer term, the provision of a safe water supply, the use of toilets and application of simple hygiene are the only guarantee of a prevention of similar outbreaks.

According to Epidemiological Comments (1992), unspecified perinatal causes of death, followed by intestinal infection, are major causes of the high infant mortality rate in South Africa. In this regard, intestinal diseases such as diarrhoea, typhoid, hepatitis, dysentery and cholera are related to inadequate water supply and waste disposal (Von Schirnding et al. 1993: 73). The incidence of typhoid reflects the poor quality of rural sanitation and the pollution of rural water. Recent declines in the incidence of these serious diseases in Gazankulu, for example, have been linked to new sanitation and water services (Von Schirnding et al. 1993: 77).

The causes of infant mortality, in particular as a result of intestinal infection, are very important indicators of the health status and socio-economic conditions under which communities live (Wilson & Ramphele 1989: 100).

In addition, poor dietary patterns, the lack of ablution facilities, the absence of piped water and adequate housing, combined with the prevalence of diseases, increase vulnerability and the susceptibility of children and infants to life-threatening disease. Furthermore, gastroenteritis was the most common cause of death in the Coloured community (176 per 100 000) and the second most common amongst the African people (86 per 100 000) (Wilson & Ramphele 1989: 100).

All these factors indicate the need for the sustainable development of primary health care services. Such services, either in rural or urban areas, cannot become a reality without the proper availability of clean water and significant

improvements in sanitation and hygiene. Because the supply of clean water in sanitary conditions is a sine qua non of primary health care, a study which elucidates the principles and problems of water supply projects in South Africa, has become an urgent necessity.

1.3 SOCIOLOGICAL RELEVANCE OF THE STUDY

It was not until quite recently that sociologists and social anthropologists were called upon to play an extensive role in rural development. For decades, development has been piloted by the planned intervention of engineers, planners and others with merely technical expertise. Other than being requested to undertake impact assessment studies related to development projects, the sociological input was never required. However, the unprecedented failures of projects have led to the current recognition of the importance of prior social information in planning for social change.

It is important for social scientists to harmonize theory and practice, and a competent researcher will aim to demonstrate how theory may be applied. It is also necessary to promote a multi-disciplinary approach to development needs so that misperceptions might be dispelled and a spirit of cooperation promoted (Cernea 1985: 5). Although development-oriented social scientists have become more and more involved in development projects, they are often uncomfortable with them and straightjacketed by blueprints, technocratic biases, short time frames and other restrictions. However, social scientists have gradually been learning how to make operational contributions within this planned approach to development. Furthermore, Cernea (1985: 5) states that social scientists have been given opportunities to:

- develop systematic bodies of sociological know-how, fitted to purposive development intervention, as operational modules to be adjusted cross-culturally

- accommodate patterned interdisciplinary interaction between sociologists and other development practitioners
- frame strategies and sociological methodologies for development action.

With the shift of emphasis from purely technocratic development to the inclusion of social engineering, there was little knowledge about how to conduct social analysis that was relevant to projects. Although more information is available today, it is still insufficient. Because of this, concerted efforts should be made to develop practical guidelines and approaches for people-oriented development. People-oriented/centred development assumes that the people who stand to benefit from development are involved in and are conscientized towards the promotion of development action (Korten & Carner 1984: 201). In addition, they state that the people-oriented approach looks "... to the creative initiative of people as the primary development resource and to their material and spiritual well-being as the end that the development process serves" (Korten & Carner 1984: 201).

In an effort to demonstrate the feasibility of the people-oriented approach for development, the researcher undertook some practical, hands-on projects with the intended beneficiaries. Through practical action, the researcher conscientized and mobilized the communities concerned for their own development. Summing up the importance of practical action, Waitzkin et al. (1978: 278) state that practical action is "geared to community action, to mobilizing people to work for a healthy environment in the wake of the loss of their homes and their community." This orientation shows how sociologists can work together with a community and, in so doing, not only translate theory into practice, but use the opportunity as a learning experience (Mills 1987: 6). Similarly, the practical projects undertaken by the researcher were indeed a learning experience.

1.4 AIMS AND FOCUS OF THE STUDY

The three major aims of the study are as follows:

- to introduce the socio-technical approach to the development of rural water supply and sanitation programmes
- to demonstrate the compatibility of key components such as negotiations, need assessment, community participation, community-based management and appropriate technology (in terms of affordability and acceptability) in the improvement of water supply and sanitation projects
- to draw and translate research and pilot projects into practical guidelines and principles for improvement of rural water supply and sanitation for use in other areas of South Africa

By means of participatory intervention, the researcher intended to raise the consciousness of communities towards water supply and sanitation issues. The emphasis was on the need assessment studies, priorities, aspirations and community perspectives with regard to their water and sanitation conditions. Also, participatory hygiene education on the use of water and sanitation was promoted. Posters and other audiovisual materials about water and health education were used. The intended beneficiaries were also expected to share their own ideas and experiences on water and sanitation issues by means of discussions, drama and music. This was the rationale for the participatory educational programmes.

1.5 UNIT OF ANALYSIS

According to the Epidemiological Comments (1980 and 1991), cholera epidemics were rampant in the Eastern Transvaal/KaNgwane and Northern Natal/KwaZulu areas in the early eighties. Moreover, despite the fact that cholera epidemics have not been experienced since 1987, it is important for

South Africans to be alert enough to prevent their recurrence. The reason for this is that the Eastern Transvaal and Northern KwaZulu are immediately adjacent to Mozambique where cholera was rampant in 1990. The researcher therefore selected an area in KwaZulu for investigation, namely, two wards in the Ndwedwe district.

Towards the end of the water decade (as promulgated by the United Nations), sporadic incidents of typhoid were reported in some parts of Lebowa. However, in Bolobedu, an area which lies east of Pietersburg, the epidemic has become endemic due to the use of unprotected water sources and the lack of proper sanitary facilities. It was for this reason that the researcher selected this area for investigation. The other area included two wards in the Ndwedwe district of KwaZulu. Details about the selection of these areas are discussed in the case studies chapter (chapter 5). The unit of analysis, therefore, refers to these three communities (presented in this study as three case studies).

1.6 RESEARCH STRATEGY

The case study method has been adopted in this study. In brief, the "case method refers to the practice of studying one or several particular, representative cases in depth with the eventual aim of inferring generalizations about society as a whole" (Hamel 1992: 40). In this study, three rural communities were selected for in-depth investigations with a view to learning what needed to be done at grass roots level, and ultimately making the benefit of such experiences and insights available to other communities and the authorities at large. Methods of investigations include open-ended, unstructured questions, group discussions, community meetings and structured questionnaires (see Appendices A, B and C).

1.7 CONCLUSION

In conclusion, it should be emphasized that the improvement of rural water supply and sanitation cannot depend solely on planned projects with technocratic biases, but that such improvements can only be effected by inter-disciplinary efforts. The importance of social engineering in the implementation and evaluation of projects cannot be overemphasized. However, due to the years of isolation in the field of development, social scientists' inputs were limited to impact evaluation rather than implementation. This has, therefore, resulted in a serious lack of practical guidelines and an urgent necessity to demonstrate how theory may be harmonized with practice.

It is also crucial for universities and other relevant institutions to begin to train both technical experts and social scientists to recognize the importance of interdisciplinary cooperation as a means of promoting rapid social and economic development in our society. The Loughborough University of Technology's Water, Engineering and Development Centre in London, for example, may serve as the best example for our universities. The 1992/93 drought relief efforts which have been co-sponsored by the Independent Development Trust and Kagiso Trust, as well as the eventual establishment of the Mvula Trust, are a clear indication that there is movement towards community-based development in South Africa.

What follows is a brief chapter outline of this thesis. In chapter two, three theoretical frameworks for development, namely modernization, dependency and the humanist perspective are discussed. Special emphasis is given to the latter since it forms the basis for the researcher's theoretical point of view. Chapter three briefly outlines the theoretical background of the humanist perspective which includes, the community-based/'people-oriented'/micro approaches and participatory and action research. The chapter culminates with an examination of the researcher's methodology. An in-depth discussion of the

complexity of negotiations for research projects, with special reference to the Lebowa government, is discussed in chapter four. In chapter five, three case studies are presented. The summary and conclusions follow in chapter six.

2.1 INTRODUCTION

For three decades or so, the analysis of development issues has been dominated by two broad theoretical perspectives namely, modernization and dependency theories. Either one believes, as modernization theory postulates, that the poor are poor because they cannot take advantage of existing opportunities for self-advancement because of social values and attitudes that derive either from their cultural heritage or from their persistent poverty, or else, conversely one believes that the poor remain persistently poor because too few opportunities exist for them to improve their lot and that avenues for self-advancement are historically linked to the advancement of the more privileged sector of society at the expense of the underprivileged. In the second case, the cause of poverty is regarded as being structural rather than cultural (Derman & Poultney, in Emmett, 1989: 4).

In contrast to the structuralist analysis and interpretation of poverty, development and underdevelopment, the humanist approach emphasizes empowerment of people as a prerequisite for development. Despite the unprecedented change and progress in some developing countries over the past few decades, both modernization and dependency theories have contributed little to effecting significant development to rural communities worldwide. It is estimated that some 800 million individuals continue to be trapped in what Chambers (1983: 1) terms "absolute poverty: a condition characterized by malnutrition, illiteracy, disease, squalid surroundings, high infant mortality and low life expectancy such as to be beneath any reasonable definition of human decency." With community-based (people-oriented) approaches, people are empowered and feel they are part of any given development. Because of the motivation engendered in such people, they become commited to making development projects more sustainable.

In South Africa and it's former so-called independent states, much has been said and done to improve the lot of rural communities over the past decade. According to Swanepoel (1988: 1), the problem is not that the rural areas have not received attention. It is rather that, in spite of many well-intended projects and much high-minded rhetoric, the plight of the rural poor has still not been successfully addressed. He further states that the rural poor are included in projects but that such projects are not necessarily developed on a long-term basis. Another problem is that we are conditioned to expect poor results from rural development efforts. Projects very seldom progress as planned. The envisaged end results of projects are usually disappointing or else do not materialize at all. We usually accept this with a shrug and knowing remark about how conditions are in the rural areas, or how illiterates and tradition-bound people are just not interested, or how government officials just cannot cope (Swanepoel 1988: 1).

Human resources, labour and even the availability of capital for the execution of rural projects are readily available. If properly mobilised and harnessed, a lot can be done to reduce poverty and improve the quality of life. Existing traditions, values and institutions are strongly entrenched and can neither be ignored nor changed in the short term (Bran & Cheong, in Swanepoel 1988: 1). Although obstacles to development do exist, such factors can often be converted in order to lend momentum to the whole development process. But such benefits can only be achieved by means of dialogical intervention with the intended beneficiaries.

2.2 STRUCTURAL APPROACHES TO DEVELOPMENT: A CRITICAL ANALYSIS

Without going into any great detail about traditional approaches to development, namely the modernization and dependency approaches, the researcher rather turns immediately to a detailed discussion of a community-

based, people-oriented (humanist) approach because this approach forms the basis of this study's theoretical orientation to development. A brief critical overview of the modernization and dependency approaches will nevertheless be provided.

2.2.1 Modernization theory

Although an attractive development model, modernization has engendered much hardships and constraints in developing societies. Poverty and many complex social problems experienced in the Third World countries have been the result of modernization. Its principle of total transformation of societies from traditional to modern has overlooked and bypassed the readiness and receptiveness of these societies to modern science and technology. This theory has deliberately advocated the eradication of traditional structures, norms, beliefs, values and customs in order to make way to modernization. It is stated that modernization programmes are deliberately initiated to eliminate social and cultural discontinuities that retard the economic growth (Coetzee 1989: 34).

According to this paradigm, the traditional way of doing things is barbaric and primitive, and is, therefore, an obstacle to economic growth. Hence, the deliberate undermining of traditional social structures and the enforced acculturation to western value systems is regarded as necessary (Shuenyane 1992: 19). Etzioni-Halevy (1981: 50) writes: "The Western experience was to be emulated by these countries, which were reckoned to be lucky in having been given the opportunity to catch up so speedily without having to go through the long and tortuous historical sequel of development in the West." This statement presupposes that the West went through difficulties before they could achieve their goal of modernization. The theory is that developing countries need only to extrapolate this from this model for their own good. Etzioni-Halevy further states that moderniz-

ation theory has been accused of closing its eyes to the fact that modernization, let alone Westernization, is by no means a universal pattern; that many third world countries, having started out on the path to modernization, did not complete the journey, but settled down into a variety of structures that were neither traditional nor modern, and most certainly had little in common with those of the West, while others most clearly chose a communist rather than a Western path to modernity.

In the South African context, modernization was given its initial impetus as a result of the discovery of gold, diamond and coal. The exploitation of these minerals led to Southern Africa's own Industrial Revolution, which, in the process of creating jobs and wealth, generated highly undesirable levels of environmental degradation. This degradation comprised atmospheric pollution, water pollution, soil deterioration and erosion, deforestation, land pollution and ozone depletion (Shuenyane 1992: 7).

Socially, modernization has caused the migration of labour from a context of subsistence agricultural societies to the mines, and effected a change from extended to nuclear families. It has also been the cause of emotional instability in displaced individuals, crime, slums, informal "settlements" because of a result of a lack of proper housing, unemployment, and the countless other problems associated with modernization. Most economically active young people have left and continue to leave their rural villages to seek jobs in metropolitan areas. Because of the system of apartheid which was entrenched in South Africa, agricultural activities for blacks became an unattractive option. Unfortunately, no-one can restore conditions to how they were in pre-colonial times when people lived in harmony with their environment. Shuenyane (1992: 8) observes that, in pre-colonial societies, there existed taboos which protected certain species and natural resources such as trees, frogs, tortoises, rivers and so on, and so protected the ecological context as a whole.

Though desirable, the introduction of modernization into the developing world could probably have worked better if its proponents and propagators had been sensitive to and appreciative of the recognition and acknowledgement of the original pre-modern social values, norms and customs at the outset. It is precisely because of these historical failures in the propagation of modernization, that an acceptable approach which can permanently eliminate the problem of underdevelopment, needs to develop.

2.2.2 Dependency theory

The dependency perspective arose out of a powerful critique of modernization theory. According to Browett and others, one major criticism of the dependency theory is that it is not original. It is "... plagued by the mirror-image trap of attempting to create a paradigm through direct, polemical opposition of the old whilst remaining in the same problematic" (Browett, in Fair 1982: 34).

Other than posing a challenge and identifying problems that accompanied modernization theory, which is its most important contribution, the dependency theory offers no clear proposals for the solutions of those problems. It is stated by Riddell (in Fair 1982: 34) that, in diffusionist thought, a colonial transportation network is considered a positive element in the spread of modernization; in dependency thought it is regarded as negative because it merely promotes the integration of the colony with the metropole, and consequently the drainage of the colony's resources and its economic subservience. Such dramatically opposed approaches to the same set of facts lead into a theoretical *cul-de-sac* (Browett, in Fair 1982: 34). He states:

> What we are left with is a barren analytical approach which can explain what has happened in the past... but which, as yet, offers few, if any,

insights as to how changes can be implemented in the structures it has interpreted. In brief, it provides an understanding of the basic structural causes of the contradictions within capitalism but does little to generate proposals for their elimination.

Though insufficient, dependency theory suggests a theoretical alternative for overcoming the problem of underdevelopment and the revolutionary disruption of capitalism and its replacement with socialism. According to this author, it would appear that dependency theory advocates socialism as a prerequisite for any strategy which might effect development . Socialism would produce the desired result of reducing dependence and generating a more equitable distribution of wealth (Browett, in Fair 1982: 35). Though theoretically an attractive option , in practice socialism seems to have demonstrated serious shortcomings. For example, in Eastern Europe, socialism ignominiously failed. Hence, the African National Congress (ANC), which in the past, advocated socialism seems to have abandoned such an ideal and opted for a dynamic, integrated economy able to provide higher incomes, reduce excessive dependence on imports and compete in foreign markets (African National Congress 1994: 28). In order to actualize economic objectives, the ANC emphasizes the significant role which public sector investment must play to complement the role of the private sector. It also advocates community participation in stimulating reconstruction and development.

However, mention of the unique success of socialism in China suggests that socialism might not be a total failure. In the latter country a socialist approach to rural development seems to have worked. Aziz (1978: 94) states that "there is no segment in China which can be called privileged but there is no one whose basic needs are not met". Although there are regional inequalities, there is no unemployment, and the degree of inequality in income and in economic opportunity is narrower than in

almost all other countries in the world.

Another strategy suggested as an alternative for overcoming underdevelopment is one of "self-reliance" and a "delinking" of the underdeveloped country from the world economy. However, demographic and geographic realities, which, in certain countries would not necessarily disappear even if the capitalist system did, cannot be ignored (Seers 1981: 144). In this regard one may state that there remain no immediately apparent options for any government with several of the following liabilities: a small population, ethnic divisions, location next to a superpower, few natural resources, a culturally subverted bureaucracy, high consumer expectations and a narrow technological base. If there are any realistic options for the government of such a country, Seers (1981: 144) adds, it would not be whether or not to be dependent, but which external power to be dependent on just as liegemen in the Middle Ages had to choose which baron they would serve. For example, countries neighbouring the Republic of South Africa, like Lesotho, Swaziland and Botswana, may find it difficult to detach themselves from South Africa as a superpower. Self-reliance and detachment remains an unrealistic option for them.

Furthermore, even though colonies and satellite countries may achieve political independence, they will remain economically dependent upon their centre of exploitation because the latter has the capital. What follows now is a discussion of humanism as an alternative approach to development.

2.3 THE HUMANIST/COMMUNITY-BASED APPROACH TO DEVELOPMENT: A NON-STRUCTURAL ALTERNATIVE

2.3.1 Background and definition

All development efforts, over the past three decades or so, have been focused on economic growth with a view to eliminating poverty and accelerating development. This approach, as propagated by modernization and dependency theories, emphasizes the importance of structures and systems in society that will enable development to take place. Proponents of **capitalist ideology and modernization,** according to Alant (1990: 117), attempt to legitimize the operation of the market economy wherever it exists in the world. They also attempt to encourage its implementation as a means to effect "development" within the Third World. Their belief in the "market system", Alant adds, is grounded in the conviction that the economic growth generated by this type of system is a means towards the achievement of "progress" in society.

According to Berger (1977: 53), there are theories that view economic growth under capitalist market conditions as the fundamental "engine" of development. These theories are linked to policies intended to create, maintain, or improve this "engine". The common assumption of these theories and policies is that development, the desired goal, depends on the necessity for this kind of economic growth to become even "bigger and better" (the last two adjectives are often treated as synonyms). The more growth there is, the more development there will be - if not right away, then in the long run. In this perspective, Berger adds, the problem of underdevelopment is primarily, if not exclusively, **economic.**

Conversely, Alant (1990: 117), argues that the proponents of **socialist ideology and dependency** attempt to legitimize the publicly planned economy as a way of organizing the production process. They, in turn attempt to encourage "socialist revolutions" in order to engender such systems. With regard to the Third World, proponents of socialist ideology

suggest that the only means to prevent the exploitation of these countries by the international capitalist system, is by engineering a socialist revolution in which all ties with the world capitalist system are severed. In other words, the severance of ties with capitalist countries, causes all underdevelopment to cease.

Taking the argument further, Coetzee (1989: 88) states that proponents of the modernization perspective see change as the process of adaptation of existing structures and patterns to the variables not present during the traditional period of equilibrium. As a result, development is often defined as a striving for controlled transformation. This implies an ideal of technocratic control. It means that, if the necessary techniques can be effectively used, the problem of underdevelopment will be solved. Berger (1977: 34-37) adds that, in general, this point of view, reflects the concept that the world is in essence changeable, and that the people, the engineers, have the ability to effect necessary changes.

On the contrary, dependency theorists define development as an increase in the ability to control the transformation of the social structure based on the assumption of a definite movement from a situation of dependency to one of self-sufficiency (Roxborough 1979: 5). While modernization theory believes in evolutionary transformation, dependency theory believes in revolutionary change. Berger (1977: 11) argues that both the ideologies of "capitalism" and "socialism", based on their respective "myths", need to be debunked. His argument is that they are not humane. He further states that the implementation of humane policies requires that neither the "myth of growth" nor the "myth of revolution" be seen as the panacea for Third World development problems.

Indeed, despite applications of these approaches worldwide over the past few decades, no one can deny that no real development has taken place.

Underdevelopment is still in place throughout the developing world. Instead of the trickle down of economic growth, as propagated by the modernization perspective, the growth trickled up in favour of the middle and upper classes. Hence, the rich became richer and the poor became poorer because of the uneven distribution of the means of production, income and human capital (Keeton, in Coetzee 1980: 141). He further states that, all individuals are not equal, neither in their access to productive resources, services and output, nor in their individual capacity to produce.

It is against this background that a humanist perspective was developed in the 1960s. In the context of this thesis, concepts such as humanist, micro-approaches, people-centred/oriented, and community-based development are treated as one and the same thing. The humanists argue that the assumption that development is not merely the result of the master plans of so-called experts, implies that development (as a process with deeply embedded moral undertones) must be approached from other points of departure as well (Coetzee 1989: 89). Berger (1977: 13) states that every human being knows his/her own world better than any outsider (including the expert who makes policy). Berger writes: "Those who are the objects of policy should have the opportunity to participate not only in specific decisions but in the definitions of the situation on which these decisions are based. This may be called cognitive participation."

It is therefore clear from the foregoing argument that people must be central to any development effort. The lived-through experience, individual interpretations, attunement, understanding, constitution of the life-world, negotiations and renegotiation of so-called taken-for-granted directives, the giving of meaning, etc., are important in development. In other words, it is the people, the communities in the developing world, who must

generate directives for development in accordance with how they understand their life world because they can attach meaning to it much better than outsiders (Coetzee 1989: 99). According to the humanists, therefore, development is "...the well-coordinated series of changes, sudden or gradual, whereby a given population and all of its components move from a phase of life perceived as less human to one perceived as more human" (Goulet, in Coetzee 1989: 99).

According to Swanepoel (1988: 2) the primary objective of rural development is to improve the quality of life of the rural poor. In this regard, Obaidullah-Khan (1980: 57) writes:

> Development, therefore, is not the development of an area arbitrarily called rural nor is it development of agricultural production with a component of improving social services. It is a fundamental process of social, economic and political transformation of a peasant society in which the main actors are the majority members of that society themselves.

Swanepoel (1988: 2) concludes: "Rural development cannot emphasize production, nor can its main target be the creation of infrastructure. Yes, a higher production figure and an improved infrastructure should contribute to the well-being of the rural poor," but this should include not only production but also the development of the people who produce the goods.

Taking this argument further, Korten (1984: 300) writes:

> The performance of a production system must be assessed not only in terms of the values of its products, but also in terms of the range of society it includes as participants and the quality of the worklife it provides for them. One critical distinction between the production-centred and people-centred development is that the former routinely

subordinates the needs of people to those of the production system, while the latter seeks consistently to subordinate the needs of the production system to those of people.

In this sense, rural development is humanistic. It aims at the development of human beings. Human beings must therefore be the centre of development.

In planning for development projects, planners need to adopt what Gow and Van Sant (1983: 432) call a "process" approach as opposed to the "blueprint" style which has predominated until now. According to these authors, the process approach rejects the assumption that projects are simply vehicles for the application of predetermined government solutions to development problems. They believe instead that it is based on a process of continuous dialogue between planners and beneficiaries, the purpose of which is a search for the most appropriate strategy. Furthermore, the authors warn that "... creating effective participation is a gradual, evolutionary process in which both project staff and potential beneficiaries are willing to try various alternatives, discard them when they prove unworkable, and try others." Planners must, therefore, be prepared to be involved in what Chambers (1983: 201) calls "reversals in learning" - putting the last first. Chambers emphasizes the need for planners to learn indigenous knowledge from rural people.

From this point of departure, we will now turn to the definition of the key concepts of the humanist approach to development (with a view to meeting basic needs) in the following section.

2.3.2 Key concepts of the humanist approach to development

Contrary to modernization and dependency perspectives, the humanist's

point of departure is that development and economic growth are not necessarily related. Development is not attained by means of models designed by experts and it may even exceed the satisfaction of human needs. Development must be firmly based on human well-being, and in terms of this premise, the hermeneutic approach (refer to chapter 3 in this regard) will focus on ways to uncover the people's own definitions of human well-being (Coetzee 1989: 153). The hermeneutic approach, Coetzee states, is based on the principle of **people** being at the centre of analysis. Development therefore must be seen as the creation of conditions for the realization of everyone's potential. It is on the basis of this assertion that the key concepts of the humanist approach may be seen to be relevant, and they will now be examined one by one.

2.3.2.1 Community

The term "community", as Kuper and Kuper (1985: 135) state, relates to a wide range of phenomena, and has been used as an omnibus word which is packed with diverse associations. A preliminary confusion, they state, arises between the idea of community as a type of social relationship or as a sentiment. Subsequently, most scholars have used the term "community" to connote a form of collectivity. However, some theorists, such as Nisbet, have kept the community-as-sentiment approach alive in their emphasis on "the quest for community" and their concern with the loss of community in modern life. These approaches are clearly mixed with some nostalgia for a glorious past in which people were thought to be more secure, less alienated and less atomised.

In the context of this research, a community is defined as a group of people who, by virtue of occupying a common geographical area under the same tribal/local authority, constitute a community. In this

sense, it is acknowledged that a community may not necessarily be a unity. There may be wide divergencies within a community in terms of interests, customs, values and power (hierachies). However, the humanists warn that values, customs and interests are not static but dynamic. This means that they are subject to constant revision of meaning. In many contemporary communities there are different political groupings with different agendas for development. Because of this, divisions, or lack of unity and common goals, prompt the researcher to define the concept "community" in terms of geographical cohabitation. In addition, the concept "people" is defined in the same way as "community."

2.3.2.2 Development

The term "development" is commonly defined as the embodiment of a process of directed change that brings about economic growth and political development, resulting in autonomy and social reconstruction. In most cases, development is preceded by development plans, programmes and policies, and, in this sense, it can be defined as a process of directed change. This process of change can be legitimized on the basis of the fact that it links up with the convictions of those involved (Coetzee 1989: 104). Coetzee further states that development, according to the latter view, is defined as an increase in goods, achievements, services or the reordering of distribution. It thus holds that development can be measured by "objective" indicators such as growth in per capita income, gross national product, etc.

Obaidullah Khan (1980: 57) argues that, although the reduction of hunger, poverty, unemployment and inequity together constitute a test of development, the objective of development is to improve the quality of life of the masses of people and unleash their creative energy.

Obaidullah Khan writes: "With the basic needs of food, employment, health, habitat and education are participation by the majority population in decisions that affect themselves, their family, their community and their role in society at large."

Coetzee (1989: 100) argues that no true development and no meaningful new international economic, social or political order can emerge unless certain key questions are answered to a certain extent. Questions like the following are crucial to debate:

- Development - from what?
- Development - by whom?
- Development - for whom?
- Development - in what way?

In short, development should be participatory and liberate the human potential which is abundant, especially in the rural areas. With regard to the concept "development", the following two related issues need to be addressed:

Development and the highly sensitive consideration of meaning

According to the humanists, development involves a constant reflection of meaning. Therefore, the people and their needs must form the crux of any development thinking. In other words, development experts must not pre-determine development projects for implementation without consultation with communities involved. Coetzee (1989: 155) states that people do not constitute meaning in accordance with computerisable predictions. He further states that the giving of meaning to a life world implies an ongoing contact and continuing exchange which leaves the capacity for change wide open.

Perroux (in Coetzee 1989: 156) adds that the idea of progress is dependent on the continuous affirmation of meaning, ingenious efforts to encourage the perseverance of individuals, and a will to create a meaningful life. A creative interpretation of growth, progress and development, he states, should include the following:

- a desire (in individuals and groups) to work towards a specific way of life, a specific conception of reality, the establishment of a political will, general human well-being etc.
- utilization of the existing economic and social structures in such a way that they contribute towards full individual development

It is further stated that the most important shift in emphasis when using the hermeneutic principle, is that it places the meaning and the specific circumstances within which action takes place, in the centre of analysis. This means an approach from below and not from above, namely the bottom-up versus the top-down approach. It is, therefore, of the utmost importance that often unheard and unseen people be given a chance to contribute input into development projects. Their customs, values, norms and beliefs must also be taken into account when projects are being initiated (Coetzee 1989: 156).

Mahbub ul Haq (in Coetzee 1989: 157) states that one of the "sins" of development planners is that people are not drawn into the development enterprise. According to him, there is often a neglect of human resources and development plans are designed to lead to higher growth rates. Very often, growth in terms of accepted criteria (economic growth, literacy programmes, health plans) has meant very little improvements in social justice - development has not touched the ordinary lives of the masses. Therefore, at the core of a hermeneutic approach is the principle that development has to be built around

people, rather than people around development.

In his critique of modernity, Berger (1977: 195) states that modernity implies that people can no longer live in the "security" of their traditions, which appear to be unavoidable, obvious and unalterable. In the same context, Romm (1990: 120) adds that the shift from premodernity to modernity is thus a process in which people lose the security of living within a fixed unquestionable frame of meaning. In other words, development projects should not try to erode the customs and values of communities, but should rather accommodate them through a meaningful dialogue with intended beneficiaries.

In terms of the humanist approach, therefore, meanings are involved in defining the basic needs. And meanings include both the social dimension and a dimension of self-actualization.

Development and consciousness

People have the ability to create a world of meanings, and in order to understand the social reality within which people live, development studies need to be based on the way in which the participants themselves experience social situations (Coetzee 1989: 158). In order to understand people's needs, development experts or outsiders must engage in a dialogue with the people themselves. It is also important for developers to raise the consciousness of communities and also be prepared to listen to what the people themselves have to say about their own circumstances. Consciousness raising is a method according to which the suppressed group is taught to understand its circumstances. The raising of consciousness can be done through participatory education.

Coetzee (1989: 4) adds that consciousness raising is seen by some developers as a project of a higher class group directed at a lower class population. He warns the upper class group not to undermine the knowledge of the lower class group. He further states that diffusion of innovation involves convincing people of what is good for them. He further states that as a basis of this process the diffusionist proponents believe that: **the path that has been followed by the so-called developed nations was to serve as an example to be emulated by the traditional "underdeveloped" nations (1989:10).** The idea of raising consciousness in this sense, he states, should be rejected. In addition, Chambers (1983: 201) advocates the concept of "reversal learning", which simply means that the developers and outsiders can learn from rural people themselves. He states, that hierarchy, authority and superiority prevent learning "from below". The developers must learn directly from rural people, try to understand their knowledge systems, elicit their technical knowledge and negotiate the most appropriate solution to problems with the people themselves.

Coetzee (1989: 158) further pleads that people who are confronted with the possibility of development should have the right to decide whether or not to adopt it for themselves. They should thus be freely permitted to reject development proposals. He further states that the protagonists of development, on the other hand, have to accept that a person who experiences the underdevelopment situation, experiences it consciously and as a reality - a reality which is seldom experienced in accordance with sophisticated indices of well-being (Coetzee 1989: 158).

Proponents of the humanist perspective occasionally doubt if the development experts **really** understand developing communities. In this regard, Schumacher (1973: 185) states:

> The Aid-givers - rich, educated, town-based, know how to do things in their own way; but do they know how to assist self-help among two thousand million villagers - poor, uneducated, country-based? They know how to do a few things in big towns; but do they know how to do thousands of small things in rural areas? They know how to do things with lots of capital; but do they know how to do them with lots of labour - initially untrained labour at that?

In addition, Swanepoel (1988: 2) has this message to South Africans:

> Make do with what you have. That does not mean that we should leave the rural people in the lurch. But it means that our scarce resources should be applied with wisdom and foresight; that we should stop building bureaucratic structures and start addressing the real problems; that we should control our grandiose ideas, stop spending money on projects with high political visibility, and rather get our priorities right; and we should stop the terrible waste through duplication.

Coombs (1980: 31) completes the picture by warning that:

> Rural people are not sheep who can be led blindly. They generally do not respond well to preaching and propaganda that fail to give them convincing reasons and new insights into why they should change their customary behaviour and practices.

Development must involve sensitively approached raising of the consciousness of the people. Through dialogue, development experts and communities will be in a position to achieve their desired goals. Dialogue does not imply that one automatically accepts another person's definition of reality, but dialogue may draw on, but also modify, social traditions.

2.3.2.3 Community participation

Participation is the cornerstone of humanistic/community-based or people-oriented development. Berger (1977: 148) prefers to call community participation "cognitive participation". "Cognitive participation", he states, means that one tries to safeguard the right of others to "co-define" those aspects of reality that are relevant to policy. In addition, Alant (1990: 119) states that, by cognitive participation, Berger refers to the people's involvement in providing knowledge of the reality of the situation with which they are confronted. He further states that participation on the level of "cognition" implies that people have the opportunity to express their conception of the nature of the "reality" within which they are operating.

Involvement of the community in development projects is currently favoured in third world countries. It is also commonly recognized in literature (White 1981: 123) that the "bottom-up" against the "top-down" initiated projects are more likely to succeed than those initiated by outsiders.There is, therefore, a need for the community to be involved in decision making and the choice of a final design of the systems in order to ensure their adequate operation and maintenance.

Participation in the development context implies and emphasizes the necessity to involve those people who are the supposed beneficiaries of development. The search for more accurate and consistent explanations of social, economic and political realities implies the involvement of those people who have up to now often been the "object" of development planning. Participation means a removal of the monopoly on knowledge, an awakening from the bottom (Coetzee 1989:162). In addition, Hall et al (in Coetzee 1989:162) state that participation is a catalytic process of freeing the creative forces of the

impoverished and exploited of any given society and enabling those forces to come to grips with the problem of underdevelopment.

Communities need to be involved in determining and defining their own needs instead of having them defined from above. Through participation, people are able to give meaning to their problems and also create a life which is meaningful to them. A two-way flow of information between communities and project planners is a prerequisite for development projects aimed at meeting basic needs. Through participation of the intended beneficiaries, development expenditure is likely to be more worthwhile to the extent that projects are planned in ways that involve the intended beneficiaries in decision-making, implementation, evaluation, and of course benefits (Uphoff 1985: 359).

Through participation, the entire population has to be drawn in. Effective participation means that the people themselves define their needs and make decisions that are meaningful and comply with their customs, norms and culture. Proponents of community participation urge development experts to encourage genuine participation. They are concerned that, in some cases, the state employs the rhetoric of participation to achieve its political ends, and to avoid the need to financially back community projects. Midgley et al. (1986: 41) calls this approach the "manipulative mode of participation." He also adds that, in the Third World, the ruling elites cannot conceive of any form of popular participation outside the structures of party political apparatus. This attitude is mostly encountered in Africa. Similarily, in the recently established democratic society in South Africa, some people involved in some political structures cannot conceive of any form of community participation outside party politics. Unfortunately, the latter approach is detrimental to development efforts.

Midgley et al. (1986: 41) further state that many governments in developing countries employ the rhetoric of self-help participatory approach to recruit labour for development projects without involving the people in decision-making and defining needs. The latter situation also occured in some of the former South African homeland states. For example, the government merely employed cheap labour from the community to dig trenches for pipelines, and then claimed community participation when, in actual fact, the community had made no input in the decision-making process (Mogane 1987: 38). In addition, White (1981: 3) states that the involvement of the population in the physical work of implementing a project can hardly be considered as community participation unless there is at least some record of sharing decisions with the community. Thus, when an outside agency remains in total control of the process and merely calls upon beneficiaries to give their labour directly, one cannot speak of community participation even though there is an element of self-help labour. The humanists condemn this approach because it is undialogical and therefore dehumanizing.

Furthermore, Groenewald and McKay (1990: 143-145) state that humanists would give recognition to projects that enable community members to participate in their own development programmes, rather than be presented with pre-packaged handouts from developers who have preconceived ideas of people's needs and requirements. Such technocratic endeavour, they add, could be regarded as a form of "social engineering", and do not concur with any of the criteria for humanist development.

Ideally, communities should initiate their own development projects. This would ensure optimum participation and community-based decision making. However, due to past practices and policies prior to

the 1990's political dispensation, many communities found it extremely difficult to initiate projects without some external influence. In view of the relative lack of community-initiated projects, planners are usually forced to intervene in order to raise the community's consciousness. In that way, therefore, the top initiates but allows dialogue and openended planning with the community. In that way then, according to Hölscher (1993: personal communication), a "synergistic process" is developed. In the context of this study, therefore community participation means creating an "enabling environment" to encourage communities to take the initiative (McCommon et al. 1990: 9). As outsiders, planners initiate projects through negotiation with the communities.

An enabling environment created by outsiders in conjunction with the communities would be one which exhibits some of the following features:

- ready access to knowledge and relevant information
- access to appropriate training courses and educational programmes, some of which are offered by the CSIR's Appropriate Technology Group
- support for the establishment of institutional structures, for example, water committees
- technical support to assess feasible technology alternatives
- access to finance.

Genuine involvement of communities in the identification, choice, planning and decision-making process should be practised. Furthermore, because of the fact that there are divisions, political or social, within our communities, efforts should be made to bring parties together to deal with a common problem of water supply and

sanitation in place of an emphasis on party politics. Through raising the consciousness of all parties, Berger (1977: 46) states that an understanding of all participants' points of view could be attained. Berger further states that the task of a sociologist in the Third World is to enable the ordinary people or masses to see through the rigidified legitimations of capitalist as well as socialist options.

Hence, community participation in the context of this thesis would mean engaging in an active dialogue between communities and the development agencies, planners and outsiders. In other words, both the top-down and bottom-up approaches are used. In terms of community-based management, outsiders need to develop or impart expertise so the community can manage its own resources after completion of the project.

2.3.2.4 Dialogue/negotiation

The concept "dialogue" refers to the ability of people to come to grips with things, ideas and people in such a way that the dynamism of social life is presented and reflected (Le Roux et al. 1986: 122).

This concept is used by humanists to underlie the fact that human reality manifests itself as an ongoing process of interpretation. Romm and Alant (1990: 48) write that social life never happens haphazardly. Previous generations produce hypotheses to set the stage for the process of dialogue which later generations have to conduct in order to develop norms and values by which they live. The social process is an ongoing process of negotiation and bargaining in which traditions from the past and interests of the present are brought to bear on each other. Dialogue thus refers to mediation between the past, present and future acts of consciousness.

Hence, it is important for planners and developers to engage themselves in dialogue with rural people, in order to understand their own interpretation of life. Because dialogue is an ongoing process, it is important, or rather imperative, that planners always encourage dialogue between people and different points of view. The views of all parties should be established and they should also be encouraged to talk about their problems and needs.

In addition, Romm and Alant (1990: 49) state that dialogical living implies that people are able to take account of their sameness (the world they share) as well as their otherness (their capacity to see the world in different ways). The term "dialogue" is used to express this form of living because this form of living is exemplified in a dialogical conversation. "Dialogue" implies that each party aims to understand the other party through the assumptions and experiences which they share, while at the same time allowing the other to have a different viewpoint. For example, dialogue is currently taking place among different political organizations in South Africa to resolve constitutional matters.

It is further stated (Alant 1990: 49) that the process of dialogue, which is sometimes referred to as the process of reflexivity, can only proceed if each party allows for the other's sameness as well as otherness. Also, reflexivity does not only have a bearing on the human capacity to accommodate sameness as well as otherness, but also on the manifestation of ongoing recognition, reappraisal, reappropriating and reform in society which indicate the creative involvement of people in their life world. However, if dialogue or negotiation collapses, a situation of "bad faith" or "false consciousness" arises, which means that people "forget" that they do have other options and so duplicate objectified structures in their minds. Berger (1969: 92) refers to this kind of

consciousness as "undialectical consciousness" and he defines this as a condition of alienation. The collapse of negotiations through the Convention for a Democratic South Africa (CODESA) could be taken as an example of "bad faith" or "undialectical consciousness" on the part of all parties.

2.3.2.5 Community-based management/Capacity building

Ensuring optimum participation of communities in the improvement of their water supply was the main focus of the three case studies discussed. McCommon et al. (1990: 90) states that the emphasis of most development experts over the past decade was on community **participation,** and less on community **management** of the schemes. Indeed, McCommon adds, community participation provides what he calls an **enabling environment**. In other words, community participation should be the forerunner for community-based management.

Therefore, central to the people-oriented approach to development is the capacity of beneficiaries to manage and control their own resources. Unfortunately, in many developing countries, Obaidullah Khan (1980: 68) states, local institutions have been initiated by various development agencies to carry out functionally specific programmes. Such organizations, he further states, are regarded as the government bureaucracy and are required for delivery of outside resources and self-management. These organizations are, therefore, imposed from above rather than by the beneficiaries themselves through face to face interaction. The people-oriented approach rejects this and prefers the community-based management of projects.

Goodell (1984: 277) warns planners not simply to assume that all people, particularly the poor, know how to form committees to implement or lobby for their interest, or how to pool resources to embark on an enterprise together or to support one member in doing so, or how to manage common funds by holding leaders accountable, or how to sustain a local organisation for common interest or ends - nor can it be assumed that they will be able to start doing so when the need arises. Therefore, it is imperative for planners to raise the consciousness of beneficiaries to this need, and also to facilitate their training in this respect. Goodell (1984: 278) further states that this can only be achieved by:

> beginning with small projects which do not overwhelm local organizational capacities, which strongly depend on local initiative, and which work towards local control. Projects, organizations and institutions must evolve **organically,** people themselves learning through trial and error rather than bureaucracies carrying out fiat from above or abroad.

In the context of this thesis, community-based management/capacity-building refers specifically to participatory management training, health and hygiene education and technical training of operators for water supply and sanitation projects. To achieve this objective, planners should start from where people are, that is, from what knowledge they already have, and build on it rather than assume that the beneficiaries know nothing. Through dialogical process, it is possible to carry out this task.

2.3.2.6 Need assessment

In the context of this thesis, need assessment studies were limited to the two projects which were initiated from above and not from the

bottom. The outsiders and planners involved in these projects assumed ignorance regarding the need and interest of intended beneficiaries to get involved in projects of this nature. Having realized the need for intervention because of previous waterborne diseases experienced in these communities, all the outsiders and planners agreed that something must be done to galvanize the active involvement of the communities. Briefly, the need assessment studies undertaken aimed at gaining access, raising the consciousness of the communities towards their water and sanitation issues, establishing their interest, and negotiating ways of working together to resolve the problems, if any. Because the projects were initiated from the top seeking cooperation with the bottom, a "synergistic process", as propagated by Hölscher (1993: personal communication), was developed.

In the third case study, the project was initiated by the community itself, and therefore, no need assessment study was undertaken.

2.3.2.7 Appropriate technology

With some people, it has become fashionable to talk of the need for "appropriate technology" in the design of water supplies. This concept has been sadly misconstrued and taken to mean cheap technology for the poor. This is unacceptable (Chibi & Mogane 1990: 2). In the context of this thesis, the researcher will follow Cairncross and Feachem's (1983: 51) definition, which they state as follows:

> Appropriate technology is the technology which fits the circumstances and is thus appropriate. A technology must be appropriate in terms of cost in order that it can be afforded; it must be appropriate in performance so that it does the job required; and it must be appropriately simple so that it can be operated and maintained. Good engineering involves sensitive application of basic

principles to a particular problem so that a solution is derived which is genuinely appropriate to the local context. Engineering should not involve the rigid application of certain standard designs. The excitement and the challenge of the profession comes largely from the degree of flexibility and ingenuity required to produce appropriate solutions for novel problems. Thus the use of appropriate technology is good engineering and sound common sense.

Appropriate technology also means taking into consideration the capability of the local population as well as the availability of local resources. In this thesis, "appropriate technology" means utilization of available water sources such as springs, wells, streams, sand, etc. instead of transporting water some kilometres away from where the community live, as well as utilizing available labour. Furthermore, development experts need to realize that there are always indigenous technologies within communities that could be utilized and improved.

In short, appropriate technology means simple technology that is affordable and acceptable by the user communities.

2.4 CONCLUSION

Clearly, the modernization and dependency theories have failed to achieve optimum development due to their concern with economic growth rather than the development of human beings. Hence, the humanist and community-based theories offer a more humane approach which take individual aspirations, needs and perceptions into consideration. Because development is for people, its focus should be the improvement of the quality of life. To achieve this, the planners should actively raise the consciousness of the intended beneficiaries and engage them in dialogue.

In conclusion, I would like to quote the former chairman of the Development Society of Southern Africa, Professor Elwil Beukes (in Swanepoel 1988: 9):

> Indeed, if true development is to take place, people, as hitherto passive and manipulated objects of development, must become the active subjects of change. Development must mean the increase in their ability to participate in and take responsibility for their own welfare.

CHAPTER 3: METHODOLOGICAL FRAMEWORK OF THE STUDY: THE PARTICIPATORY RESEARCH APPROACH

3.1 INTRODUCTION

In more recent years there has been a shift of emphasis from the traditionally dominant methodological approaches, namely the quantitative and qualitative, to a new paradigm, namely participatory research. Mouton (1989: 387) states that the quantitative paradigm, has usually been taken to refer to experimental, quasi-experimental and survey studies, while the qualitative approach has been associated with studies using unstructured interviewing techniques, participant observation, the use of documents, etc.

Mouton (1989: 388) states that the new paradigm involves a closer relationship between the researcher and the researched. That is, a significant knowledge of other people is generated primarily through reciprocal encounters between the subject and the researcher, for whom the research is a mutual activity involving co-ownership and shared power with respect both to the process and to the product of the research.

The primary thrust of participatory research is ownership and commitment by intended beneficiaries and the ultimate sustainability of projects. In the context of this thesis, the term "sustainability", means that services can be managed and paid for so they can continue to exist. In this process, information generation and collection becomes a way of building the capacity of intended beneficiaries to assume responsibilities. Problem solving mechanisms are generated from within the community while the researcher plays the facilitative role. Often, rural communities sigh with relief when, for the first time, outsiders are prepared to listen to them rather than to use them as sources of information. In other words, this approach is highly appreciated and leads to community empowerment.

In advocating a similar approach to development, Hall et al. (in Mouton

1989: 388) state that the term "participatory research" has been chosen in order to emphasize the necessity of involving those persons who are the supposed beneficiaries of the entire process. They further state that they are specifically talking about the participation of the working classes, the peasants, the exploited and the poor, in the analysis of their own reality.

In short, the basic point of departure for the researcher is that the intended beneficiaries need to be active participants in research. Humanism and micro approaches such as hermeneutics, phenomenology, ethnomethodology and so on are of crucial importance as a way of understanding the process of development. The micro approaches in general, and the micro-sociological foundation in particular, according to Coetzee (1989: 92), emphasize what people do, say and think in actual everyday sequences of events and experiences which originally have a momentary occurence. Perhaps it might be helpful to discuss some of the community-based/people-oriented approaches adopted by the researcher in this thesis.

3.2 METHODOLOGICAL APPROACHES WITHIN THE PARTICIPATORY RESEARCH PARADIGM

With regard to participatory research, three methodological approaches are at stake, namely:

3.2.1 Hermeneutics as a basis of development

The concept "hermeneutics" literally means translation, or the unwrapping or recovering of meaning. As a method, Coetzee (1989: 160) states, hermeneutics concerns itself with the interpretation of experiences. The principal task of hermeneutics, he states, is to know what is known. It re-examines all aspects of tradition and the past in order to use this understanding to interpret the present and indicate guidelines for future

action. The discovery and uncovering of the underlying meanings of all human actions, spheres of knowledge, frames of reference, and interpretation or ideological conceptions are central to the hermeneutical approach. Hermeneutics demand that people should place themselves in the position of the person or people who created the original meanings or way of doing things.

The researcher needs to understand the needs of the people while in close collaboration with them. Historicism is also important in establishing what transpired in the past in order to arrive at a solution to the present problem and develop future guidelines. This is made possible by an action research approach which is able to generate theory based on empirical, historically specific findings (Mills 1987: 62). Collaboration need not be at one level, but can be at all levels of the community. Party political and traditional leaders, both popular and unpopular, need to be consulted if the proposed project is to succeed.

An open dialogue enables the researcher and the researched to bridge the gap between the traditional way of doing things and the taken-for-granted world that people strive to understand. Coetzee (1989: 161-162) further states that understanding has to be seen as a continued process of interpretation. He states that it is a continuous process of interpretation because the parties involved in the dialogue have to acknowledge and recognise the prejudicial nature of their knowledge. According to him, the parties do not give an "objective" account of their world - no one is neutral in a dialogue. Through negotiations both the researcher and researched strive to achieve an understanding of each other.

In addition, Gadamer (in Coetzee 1989: 127) states that the knower's recognition of the prejudicial character of his knowledge is precisely what encourages him to open up to alternative viewpoints. In other words, the

researcher needs to recognise his or her prejudices prior to intervention in the community, so he or she can open up to alternatives. As Gadamar puts it (in Coetzee 1989: 127): "Dialogue requires each party to reflect its own limitations and the reality of its own position."

3.2.2 Phenomenology

The point of departure for the phenomenologist is that men and women are "self-conscious". This means that he or she can distance him/herself from him/herself and from the world (Alant et al. 1981: 63). On the other hand, Mouton (1989: 393) states that the phenomenologist emphasizes that every human being is engaged in the process of making sense of his or her life world. He or she gives meanings, defines, explains, justifies, rationalizes his or her action. The fact that people are continuously constructing, developing and changing these everyday interpretations of their worlds, should be taken into account in social research. Briefly, a man or woman is a dynamic being and is always in the process of constructing and reconstructing meanings. Therefore, human beings cannot be studied in the same way as objects and animals. No logical conclusion about a man or woman can be arrived at without him or her being at the centre of the study.

Schütz (1971: 59) adds that the world of nature, as explored by the natural scientist, does not "mean" anything to molecules, atoms and electrons. But the observational field of the social scientist - social reality - has a specific measuring and relevant structure for the human beings living, acting and thinking within it. Furthermore, the big disanalogy with natural sciences lies in the nature of the common sense understanding that theory challenges, replaces or extends. There is always a theoretical understanding of what is going on among the members of a society, which is formulated in the descriptions of the self and the other which are involved in the institutions

and practices of society.

Phenomenology is mainly focused on the understanding of society in terms of meanings. In other words, in order to study society, the researcher needs to understand the meanings that the people attach to their life world, the interpretation of reality and what is happening around them. In order to understand this reality, the interpretations should come from the social actors themselves.

Furthermore, Hughes (1980: 118) states that one of the tasks phenomenological philosophy set itself was describing this everyday experiences of the "life world", the world, that is, as given in immediate experience independent of and prior to any scientific interpretation. In other words, phenomenologists advocate the importance of meaning giving and the interpretation of experiences by the communities concerned. This is based on the premise that rural communities know their needs, problems and circumstances better than do outsiders.

3.2.3 Ethnomethodology

Ethnomethodology is about people making sense of their own life world. It is concerned to elucidate human interaction by empirical examination of those processes through which meanings are produced in social practice (Hughes 1980: 120). Hughes further states that one consequence of this stance is that nothing is required to be said about "objectivity", or for that matter "truth" except in so far as these are established through agreement "work" on the part of the social actors concerned. All knowledge is communally grounded in human practice and there is no way of reaching beyond this. In other words, only through dialogue or interaction with community members can the researcher hope to know the truth. Ethnomethodology rejects objectivity as advocated by positivists. To them

truth can be obtained through a dialogical encounter.

For ethnomethodologists, the community or the people must be at the core of any development effort. The latter is based on the premise that local people are more knowledgeable about their resources, and to some extent have indigenous technical knowledge about solutions to their problems, aspirations and needs. It is stated that whenever agents of development venture into a community in order to conduct a "dialogue" with the people living there, their own preferential positions, interests, power, expertise, etc., as well as the interests, powerlessness, and dependency of the people in question, have to be addressed as part of the dialogue on development. A central orientation in all dialogical thinking is that the subject matter under discussion must include the subjectivities (intersubjectivity) of all participants (Alant 1990: 50).

3.2.4 Conclusion

In short, humanist and phenomenologically oriented approaches are central to the researcher's methodological orientation. Chambers (1983: 46) states that "... the micro-level is again and again out of focus, and when in focus it is seen from a distance, through an urban professional's telescope. To understand rural poverty better and to judge better what to do, outsiders have to see things from the other end." Furthermore, Mills (1987: 65) states: "The challenge to understand what is happening in the Black rural areas of South Africa lies precisely in the possibility and necessity of integrating the experience of individual families with trends at macro-level."

It is on this point that a detailed discussion of the research strategy used for this study, that is, the case study method, becomes relevant. In this regard, the following three case studies, namely Relela, a rural village of Bolobedu of the former Lebowa government; KwaHlophe and KwaNyuswa,

both of which are rural wards in the Ndwedwe district of the former KwaZulu government, are presented. Because the third community (that is KwaNyuswa) was self-motivated and assessed its needs prior to consulting the Division of Water Technology (WATERTEK), CSIR for assistance, no need assessment study using interview schedule was undertaken. Information required on population size and so on was provided by the community. A detailed discussion of the research procedure used in this case study follows in chapter 5. Despite the fact that slightly different research procedures were used in these three case studies, the basic assumptions upon which the researcher's methodology is based are that:

- For any development effort, the intended beneficiaries should be at the centre, that is, they must control and manage the process.

- Through raising the consciousness of communities, they would be in a better position to identify their water supply and sanitation needs and aspirations, as well as be able to work out some means of achieving them.

- Back-up support and training of water committees lead to their empowerment and sustainability, that is, management, payment and the continued existence of projects.

- The improvement of water supply and sanitation could lead to improved quality of life, and this can be promoted through a people-oriented and community-based development approach.

- Appropriate technology (which is affordable and socially acceptable) is a way of improving water supply and sanitation in rural communities.

- Pilot and demonstration projects are often merely panaceas for further

development projects in the regions.

3.3 RESEARCH STRATEGY: THE CASE STUDY METHOD

3.3.1 Definition

A case study, as briefly defined in chapter one, involves a detailed examination of a single example of something. Therefore, a case study would involve a study of a single institution, a community or a social group, an individual person, a particular historical event, or a single social action (Haralambos & Holborn 1991: 726).

In this study, the case study method was adopted with a view to fully understanding the dynamics and structures of communities under study, so as to draw general guidelines for use in other regions of South Africa. The major drawback of this method, as cited by Haralambos and Holborn, is that it is not possible to determine how far the findings of a study into one example of a social phenomena can be applied to other examples. In order to overcome this problem, the researcher has used three case studies in order to determine their similarities and differences.

3.3.2 Case study 1: Relela

In April 1988, the matron of Kgapane Hospital in the Bolobedu district requested the assistance of WATERTEK to improve the water supply and the general level of sanitation in order to alleviate the typhoid problem in the area. In response, WATERTEK negotiated a joint intervention with the Lebowa government in order to solve the problem. Unfortunately, these negotiations took two years and did not achieve any of their objectives (details of these negotiations follow in chapter 4). In view of this delay, WATERTEK decided to effect a direct intervention in the community.

Negotiations to undertake a pilot/demonstration project received unanimous support from the community. After a few consultations with community leaders, and an initial community meeting in August 1990, the community held several meetings on its own during which the Bolobedu Water Co-ordination Committee (BWCC) was established. Although the researcher expected the community to elect a water committee for Relela, the pilot village - a practice common in other regions such as in Ndwedwe, Natal, the Bolobedu community established a bigger committee. The rationale for this was that, despite the fact that the demonstration project would be undertaken in one village, it would be beneficial for all villages to be involved so they could learn, and therefore extend the project into the future by applying what they had learned to other villages and areas.

In addition to community meetings, a study was undertaken to ascertain that the whole community had fully understood the objective of the project.

Focus groups of women, youths, civic association members, adult men from the age of 15 years and above were eligible for interviews. These focus groups were selected from various parts of the village with the assistance of the BWCC.

In order to render the study more cost effective and time efficient, the researcher decided to use a combination of an in-depth group discussion method for gathering qualitative data, and an interview schedule for gathering quantitative data.

According to the researcher's original plan, a manageable group of six people per group was to be interviewed. Despite all efforts, a minimum of eight and a maximum of thirteen people per group were interviewed. However, the researcher and her colleague managed to keep the group discussions under control, and got everybody to participate.

Group discussions started with introduction of the researchers and all participants. A very relaxed atmosphere was created and participants were encouraged to speak out, particularly when they espoused a minority point of view. All were made to understand that their opinions probably represented the views of others who were not present. In order to limit confusion and the possibility of raising false expectations, the researcher requested that the discussions be kept within the ambit of water supply and sanitation. However, the participants were also encouraged to raise other burning development issues which could either be referred to relevant organizations or be considered by WATERTEK.

To facilitate discussion, groups were shown flipcharts depicting different sanitation systems, water pollution and treatment. Group discussions were also used to share ideas and knowledge about health and hygiene. Thereafter, discussions focused on water and sanitation conditions in the village and how the group thought problems, if any, could be solved. All groups participated with great enthusiasm - even the most reticent people's views were heard. A total number of people interviewed in groups was 120. Of this total, 7.5% came from the pilot village and 2.5% from all other villages. Fourteen groups representing different structures in the community were interviewed. The sample was therefore considered to be representative. In this way, focus groups were proven to be the most effective means of gathering information (Mogane 1990: 8). Apart from the above, there were also "self-correcting mechanisms" within the groups during discussions. In view of the fact that the minimum duration of group discussions was forty five minutes per group, refreshments were served in between as incentives.

After completing group discussions, individual family members were interviewed in separate rooms using an interview schedule to gather more quantitative information such as family income, quantity of water used and

so on. The quantitative information is almost standard for every rural water initiative. Engineers and technicians need this information in order to prepare some technical options for community water supply (see interview schedule in Appendix A).

Besides its time efficiency and cost effectiveness, the research procedure adopted in this case study was more revealing and fulfilling to all participants.

3.3.3 Case study 2: KwaHlophe

A pilot water supply project involving Umgeni Water and WATERTEK was initiated by Ndwedwe Development Council (NDC) (consisting of Department of Health and Agriculture) towards the end of 1988. The primary aims of the NDC in this project were to upgrade water supply and sanitation in the area, and to draw up some guidelines which could be translated for use in other areas of the region. Secondary aims included agricultural promotion, and integrated rural development.

To ensure the acceptability and sustainability of the project, the team made contact with the tribal inkosi or chief and other community leaders to negotiate and establish interest in a project of this nature. All leaders were unanimously in favour of the project. The team was therefore also given the green light to undertake a socio-technical feasibility study.

Two open-ended interview schedules being used for individual households and key informant interviews were developed (see Appendices B and C). The rationale behind open-ended questions was to allow flexibility for respondents to raise other issues of concern which might lead to further investigation or consideration. The aerial photograph taken on 31 January 1989 (Air Survey Company of Africa, Durban) covered a total of

approximately 300 households. According to the 1985 population census, the average family size in the district was seven persons, with an annual growth of approximately 3% (Republic of South Africa: 1985).

Using the aerial photograph, a simple random sample technique of 50% of the total household figure was selected for interviews. The rationale for using simple random sampling was to ensure that each household had a chance of being selected for an interview. The study was conducted by the researcher with the assistance of her colleague (a trained interviewer). In order to speed-up the collection of data, assistance was elicited from six agricultural extention officers and two public health inspectors (all members of the NDC, the initiator of the project). These additional assistants were thoroughly briefed about the objectives of the study, and were also trained in interviewing techniques and data collection.

Traditionally, fetching water is the task of women and children, and so young and adult women from 15 years of age were therefore the primary people interviewed. The males were only interviewed in the absence of females at home. Undertaken in February 1989, the gathering of data lasted seven days.

Key informant interviews included the tribal inkosi or chief, two indunas, a retired policeman, two senior health inspectors and a senior agricultural officer.

3.3.4 Case study 3: KwaNyuswa

In view of the fact that the third case study followed a slightly different route, because the community had approached WATERTEK and were therefore evidently self-motivated and ready to start the project, the researcher felt there was no need to undertake a need assessment study.

The rationale behind approaching WATERTEK for assistance to improve water was based on the fact that, as in KwaHlophe, the KwaNyuswa community experienced similar water supply problems such as long distances to water sources, water pollution by animals and people, and occurrences of water-borne and often related diseases. The community also supplied WATERTEK with all the necessary data required, such as population information, the names of indunas/headmen, and so on. Because the community had approached WATERTEK and had unanimously agreed to contribute R40 per household, and because almost 50% of the households had already paid, it was deemed unnecessary to undertake a study to establish this data. It must also be understood that, in the first two case studies, the communities were approached in order to avoid the imposition of ideas and because the researcher had to ensure that the project was needed, and that the community was prepared and willing to make a contribution towards both the capital, operation and maintenance of the completed scheme.

For more quantitative information such as the distance to the water source, etc., the engineers were called in. They were in a better position to estimate the distance more accurately by using the area map. In fact, the third case study was more participatory than the first and the second (details follow in chapter 5).

3.4 CONCLUSION

There have been fundamental changes in methodological orientation in recent times. Community-based, people-oriented approaches are often the focus of contemporary development and this approach is based on the premise that projects that take people's need and aspirations into account tend to be more successful than those that do not. This has a bearing on the methodology used,

in this case **participatory research.** Also, the emphasis in these approaches is on the importance of close collaboration between the researcher and the researched. Often, this kind of collaboration has led to the effective capacity-building and to the empowerment of erstwhile passive communities - essential ingredients for community development. Adopting these approaches, particularly when dealing with South African poor and deprived communities, should be a priority of all development agencies.

It should be evident from the presentation of the three case studies on water supply and sanitation improvement that follows, that a community-based approach to development is the most effective possible method of prosecuting such projects.

CHAPTER 4: THE COMPLEXITY OF NEGOTIATIONS WITH SPECIAL REFERENCE TO WATER SUPPLY AND SANITATION IN THE RELELA VILLAGE IN LEBOWA

4.1 INTRODUCTION

For many decades, rural water supply and sanitation received minimal attention from researchers, development experts and the government in South Africa. It was not until the declaration of the International Drinking Water Supply and Sanitation Decade (IDWSSD 1981: 1990), and the subsequent cholera outbreak of the early eighties in South Africa, that WATERTEK became earnestly involved in research into and the development of appropriate technologies for rural water supply and sanitation. These technologies were well developed, tested and declared appropriate for rural application.

The WATERTEK's efforts to transfer these technologies into practice were hampered by serious communication obstacles because the intended beneficiaries were not meaningfully consulted and involved. Hence, WATERTEK identified a need to employ a social scientist to bridge the communication gap between the intended beneficiaries and themselves. The initial strategy of WATERTEK was to develop communication links with intended beneficiaries countrywide through the media. Through advertising appropriate technologies using television broadcast, the radio and pamphlets, it was hoped that communities would approach WATERTEK for assistance. Unfortunately, these efforts were fruitless because the television medium in particular was not accessible to most rural communities due to a lack of electricity.

Apart from this, the government's long-entrenched culture of doing everything for communities and treating them as the passive recipients of goods supplied by the homeland governments, could not simply be uprooted by media

advertisements. A different approach of undertaking pilot or demonstration projects with regard to water supply and sanitation was therefore adopted by WATERTEK. The rationale was that, by means of demonstration projects and by using a participatory approach, communities would realize their hidden potential and would want to develop their own water supply and sanitation. It was also thought that such projects would be more meaningful and effective in communities without any safe drinking water supply and sanitation.

Hence, in response to a request for intervention to improve water supply and sanitation by a senior matron of Kgapane Hospital in the Bolobedu district, following a television broadcast on April 1988 about the outbreak of typhoid in the Mogalakwena district (both in Lebowa), the researcher decided to initiate a dialogue with the government to forge a joint venture for intervention to solve the problem. To ensure long-term sustainability, and to avoid an unnecessary duplication of projects, it was seen to be important to involve all participants in the development process. Since it is the main provider of services, it is always important to involve the government in any project intended to improve the quality of life. The term "dialogue", Romm & Alant (1990: 49) state, "... implies that each party aims to understand the other party through the assumptions and experiences which they share, while at the same time allowing the other to have a different view point."

According to Berger (1977: 24) "... every commentator on the contemporary world agrees that development is a problem." He goes on to say that development is a problem for three categories of people, namely for policy makers, for theorists and scientists, and for ordinary people. Taking the argument further, Berger states that development is a problem for those who make public policy in different countries. Just what kind of problem it is, will, of course, depend on what country and what kind of **policy maker** is involved. According to Berger, almost all policy makers have one characteristic in common. Of necessity, their attention is focused on action.

On the other hand, policy makers must act day by day and are required to make decisions, often long-ranging ones, on the basis of information supplied by others.

Berger (1977: 25) further states that development is a problem for various coteries of **theorists or scientists or other people** whose principal occupation is thinking rather than needing to act. He states that there are different kinds of theorists. According to him, theorists in the rich countries of the West have, for a long time, been influential in defining the situation, that is, their own situation and that of the "underdeveloped." He states that the problem of development looks quite different from the perspectives of different social-scientific disciplines, such as economics, sociology, anthropology and political science.

Lastly, Berger (1977: 26) states that development is a problem for vast numbers of **ordinary people,** particularly in poor countries. According to him, the overwhelming majority of these people have little or no opportunity to influence policy, and their opinions about any situation at all are systematically ignored by almost all theorists.

Using Berger's three categories while adding one to them, the researcher identified the policy makers as the Lebowa Government Departments of Health (LDH); and Agriculture (LDA) (Water Affairs Section); the theorists and scientists as the Division of Water Technology (WATERTEK, CSIR); the ordinary people as the intended beneficiary communities; and the funders as the Development Bank of Southern Africa (DBSA), apart from various other social responsibility funders. The sponsors and funders form the fourth category because, without funds to cover the costs of the theorists and scientists or development experts and the costs of materials, transport and so on for intended beneficiary communities, no significant improvement in the quality of life can be achieved. Hence, it was important to involve these role

players from the inception of the project.

In pursuance of the role of each of the three key role players or participants as identified by Berger (1977: 24-25), it was noted that the **policy makers**, (in this case, the Lebowa government departments') principal occupation was to define policies and make decisions, often long-range ones which affected others. Similarly, the LDH is responsible for policy making regarding water quality control, and the provision and promotion of sanitary facilities. On the other hand, the LDA was responsible for policy making and the funding of rural water supply and sanitation.

The **theorists and scientists** were, in this case, WATERTEK, whose principal occupation was thinking rather than acting. According to Berger (1977: 25), the theorists' role is to define the situation - their own and that of the "underdeveloped". However, a distinction should be made between Berger's theorists and WATERTEK. Until the first half of 1986, the CSIR fitted Berger's description of this category very well. After the recent transition to being a market-driven organization, CSIR employees are no longer just thinkers but also actors. The latter will be demonstrated in the presentation of three case studies.

Lastly, the vast numbers of **intended beneficiaries**, Berger further states, have little or no opportunity to influence policy, and their perspectives on the situation are systematically ignored. For the latter, Berger (1977: 26) states, the problem of development is one of everyday life. It manifests itself with the pressing practicality of hunger, disease and early death, the quest for work and housing, and the experience of losing values that used to give meaning to life. Indeed, to the ordinary people, Berger states, "... the problem here is not in the making of policy or the plausibility of theories, but in the coping, from day to day, with the suffering and dilemmas caused by often bewildering rapid change in the social environment." It is important to mention that the

government extension officers directly involved and in close proximity to intended beneficiaries often are seen as being a part of the community. In other words, the latter are not detached from the realities which communities face on the day to day basis.

Because of the frequent lack of co-ordination among government, non-government and parastatal organizations doing overlapping development work among the same people, the researcher was required to initiate a process of dialogue with the view to undertaking a hands-on pilot/demonstration project. The rationale behind a pilot project was based on the premise that all participants could learn by carrying out meaningful actions on a small scale.

This chapter aims to highlight the complexity of the negotiation process between the policy makers and the theorists/scientists to initiate a project aimed at alleviating the shortage of a safe water supply and sanitation. In spite of the fact that this process lasted for approximately two years, it did not yield any favourable results. What came into being, therefore, was a situation of " bad faith" or " false consciousness" as defined by Romm & Alant (1990: 50). According to these authors, this situation emerges because people " forget" that they have options and so duplicate objectified structures in their minds. Berger (1969: 92) refers to this kind of consciousness as " undialectical consciousness" and defines this as a condition of alienation.

This chapter also aims to demonstrate that it is much easier and quicker (as elaborated in chapter 5) to initiate dialogue and raise the consciousness of intended beneficiaries and government extention officers directly involved with communities, than it is to do the same for policy makers. The latter are not only bureaucratic in nature, but are also remote from the day-to-day suffering experienced by rural communities. In order to understand the dynamics of this alienated consciousness, the researcher presents in this chapter the

summaries of discussions of several meetings which were held with the Lebowa government to plan for intervention in the communities. Briefly, after having been through this concept of " undialectical consciousness", the researcher has come to a conclusion that the dialogical process should be initiated with the intended beneficiaries **themselves** to establish their preferences and interests rather than with the policy makers. If this procedure is followed, then the community empowerment that ultimately leads to community-based management, starts from the bottom.

4.2 RECONNAISSANCE VISIT

In a telephone conversation with a senior health inspector in Lebowakgomo, the researcher established that typhoid is endemic in most parts of Lebowa. The health inspector further stated that due to financial constraints both the LDA and LDH are unable to curb the problem, and so it continues to escalate. He indicated that any assistance in whatever manner by WATERTEK would be welcomed. Arrangements to tour the two affected districts with a view to selecting one for a pilot/demonstration project were made.

Accompanied by a senior health inspector in Lebowa, the researcher and other WATERTEK personnel, visited the two affected districts in August 1988. In the first instance, the Mogalakwena area, which is situated south west of Pietersburg, was visited. In this area, it was established that one person had died and ten people had been treated for acute typhoid disease at the local hospital. According to reports, most people in the area were drawing water from polluted streams and rivers, and this polluted water was thought to be the cause of the outbreak of typhoid. It was also established that although various communities had experienced the typhoid outbreak, it was not an endemic disease in the area. Apparently, its occurrence is sporadic, particularly when most boreholes are not operational and people are forced to draw water from polluted streams. Subsequent to the typhoid outbreak

under consideration, two boreholes had been installed, and so the incidence of cases subsided during the time of the visit.

In Bolobedu, discussions held with the superintendent, the chief matron and other authorities of Kgapane Hospital revealed an appalling incidence of typhoid. The hospital treated approximately 70 patients per month for typhoid, with the result that even some of the nursing staff contracted the disease. The high incidence of typhoid is attributed to the dense population using unprotected water sources and to the fact that whatever sanitary facilities exist are poor or non-existent. As for the nursing staff contracting the disease, the local doctors attributed the incidence of typhoid among the nursing staff to carelessness, to the fact that they were not in the habit of always washing their hands properly after working with affected patients. Though not by any means the only water-borne disease in the area, typhoid is particularly endemic in Bolobedu. Other diseases include gastroenteritis and trachoma.

In a subsequent tour of the area, water samples taken from six sources and tested on-site by WATERTEK, confirmed the claims of the hospital staff. WATERTEK further established that some of the villages were equipped with boreholes. These boreholes, however, only benefitted the few households which were close to them. Thus, whatever improvements had been made in the area, were just a drop in an ocean of need and deprivation. It became obvious that, if there were alternative sources of water closer to many households, however polluted, people were not prepared to travel even a few kilometres to fetch water from an unpolluted or improved source.

During our informal discussions with the senior health inspector, it was established that there was no sound working relationship between them and the Department of Agriculture. Apparently, WATERTEK'S intervention would be helpful in bringing the two parties together.

At the end of our reconnaissance visit to the Mogalakwena and Bolobedu districts, it was decided that a pilot project be undertaken in Bolobedu. The rationale for this decision was based on the dangerous extent of the typhoid problem in the area and on the fact that a demonstration project would enable the team to learn from actually doing a small project. It was hoped that mistakes made in a small project could later be avoided in bigger projects and that the successes might be replicated. The senior health inspector agreed to organise a meeting that would involve the WATERTEK and both the LDA and LDH to discuss the proposed project.

4.3 MEETINGS TO PLAN FOR INTERVENTION TO IMPROVE WATER SUPPLY AND SANITATION

In this section, summarized discussions of meetings held with the Lebowa government prior to intervention in the communities will be provided to illustrate how, as Romm and Alant (1990: 50) state, "... a condition of alienation/ undialectical consciousness" developed. Without these summarized discussions, it would be difficult for the reader to understand the different point of views that led to the collapse of negotiations. For this reason, it is necessary to supply details about the salient points of meetings and negotiations between parties is given.

4.3.1 First meeting: 17 January 1989

The meeting between the LDH and LDA government departments (i.e. the policy makers), and the CSIR represented by WATERTEK and the Division of Building Technology (BOUTEK) (hereinafter called the theorists/ scientists), to negotiate for joint intervention in the improvement of the water supply and of sanitation in Bolobedu, was held at the LDH offices in Lebowakgomo.

As project initiators, WATERTEK (theorists/scientists) outlined the purpose of the proposed project as well as the role the CSIR wished to play in the project. They emphasized the following:

- The project would merely be a pilot demonstration project in which all the parties would need to work together and learn from one another.

- The focus of the project would be on the use of appropriate low-cost technology with community participating in the decision making, choice, planning, construction and maintenance.

- The experience gained in this pilot project would be invaluable in developing a central policy for rural water supply and sanitation. Debates are currently underway in organisations such as Water and Sanitation 2000 about the formulation of rural water supply and sanitation policy.

In response to the above-mentioned objectives, an engineer from the LDA affirmed the value of a participatory approach in rural water supply and mentioned that a similar project wherein people were consulted and involved was implemented by the department in the Nebo district. He stressed, however, that funds for the proposed project would be a problem because of his departments' financial constraints. He suggested that the Development Bank of Southern Africa (DBSA) be involved and committed from the beginning. He also mentioned that his department had experienced serious difficulties when attempting cost recovery for installed water schemes. He recommended that effective education should be part of the project and that the proposed project should be realistic.

Furthermore, he mentioned that the LDA was involved in discussions with

the DBSA for regionalized water supply and purification schemes. In these schemes, the government would bring water to the edge of villages, and would expect water committees to be formed in each community to plan, implement and maintain water supply networks in the villages. These committees would then purchase water from the government pipeline. He indicated that this was a long-term and gigantic task because there were over 900 villages in Lebowa. In reference to the time-span under consideration for implementation of the department's piped regional water supply scheme, he said that this depended primarily on the DBSA's time scale, which was between 1 and 10 years, but that a 5 year target was aimed at.

WATERTEK elaborated on the problems of water supply, noting that, depending on the outcome of a need assessment study (draft interview schedules by WATERTEK were distributed), the type of scheme envisaged would comprise spring protection with the necessary pipelines and standpipes. Such a scheme would take approximately one year to implement. The advantage of this would be low cost technology and maximum community participation in the choice, planning, implementation and maintenance of the scheme. Other objectives of improved water supplies would be an improvement in health and an increase in per capita usage.

BOUTEK elaborated on the concept of an appropriate scheme which would be a scaled-down version of the full piped scheme. It was further stated that, in cases where additional water was supplied, especially for household connections, the problem of increased sullage would have to be taken into account. Various types of sanitation systems were described and the need for education and training was emphasized. **(It should be noted that BOUTEK did not proceed with the dialogue beyond this meeting).**

The researcher emphasized the need for authentic involvement and participation of a community with view to establishing their expressed needs and to finding out exactly how they themselves might hope to solve their water supply and sanitation problems. She further stated that, with genuine participation, cost-recovery need not be a problem because solutions would be negotiated with communities involved.

The researcher indicated that a dialogue approach should be promoted from the beginning of the project and that such an approach should be continued throughout its implementation and evaluation.

Certain concerns regarding the proposed project were raised by the LDH. Their questions and concerns were as follows:

- How would the Lebowa government be motivated to undertake the water improvement project?

- How would one sound out the relevant government bureaucracies that need to be taken into account before embarking on a project of this nature?

- One should not expect to encounter any stereotyped response from the people. Their response will most probably be very different from any prior expectations.

- How will WATERTEK ensure that the objectives of this project be met? There is a danger of stimulating people's aspirations and then not being able to meet their hopes and expectations.

Views were exchanged about the above-mentioned concerns, and then the proposed interview schedule for communities drafted by WATERTEK

was discussed. Valuable suggestions and comments were made by all participants, and it was agreed that the interview schedule be updated and copies be sent to the DBSA and the Lebowa Department of Economic Affairs and Planning (LDEAP) (an official channel for all requests for funds to DBSA).

Despite the fact that both departments agreed in principle with the objectives of the proposed project, and that all participants agreed unanimously to further consultations, the LDH could not give a firm answer about its possible commitment to the pilot project because it had to wait for a decision from the Secretary of the department.

Future planning

The LDA assured the meeting that this project would not interfere with their future planning, but, on the contrary, would make it easier. This department undertook to contact the LDEAP as well as the Lebowa Development Corporation (LDC) so they could be invited to attend the next meeting. On the other hand, the LDA requested a letter from WATERTEK to explain what assistance they would need in this project. Lastly, WATERTEK undertook to:

- update the questionnaire/interview schedule, as discussed
- keep in contact with the LDA so as to obtain all relevant information available about the area
- make contact with the DBSA so as to discuss the project proposal, arouse their interest, and obtain their commitment
- obtain some preliminary estimations of cost for the project

Conclusion

In view of the fact that there was no clear-cut agenda, this meeting could

best be described as a brainstorming session. As mentioned earlier, the LDH and LDA had a minimal record of prior interdepartmental cooperation with regard to water supply projects. WATERTEK therefore stepped in as a mediator to initiate a dialogue and exchange of views between these departments which theoretically were supposed to consult with each other but in practice, did not. The lack of consultation was caused by the fact that the LDH's management was predominantly black while the LDA was predominantly staffed by whites. As a result, the LDH was more compassionate towards rural communities whereas the LDA was perceived to be less concerned about the people whom they existed to serve. Such racial problems were naturally not unique to the Lebowa government but were also visible in other national state/homeland governments.

Although dialogue was open to all participants in the meeting, the LDH took the role of an observer and only responded retroactively, while the LDA's responses were immediate and decisive. The LDH adopted a wait-and-see attitude and would ultimately concur with what the LDA had said. This attitude was also attributed to the fact that the LDA had the financial means for water supply projects whereas the LDH was only there to monitor water quality and to ensure that acceptable health standards were achieved.

It was also evident that community participation was interpreted from different angles. According to the LDA, the water supply projects in which communities were only given the responsibility of maintenance and the cost of recovery of the scheme, was seen by them as " community participation". In most cases, communities had no say in the choice, decision making and planning of the schemes. It was therefore at this meeting that the researcher again emphasized the need for *authentic* participation or dialogue with communities. Although, in principle everybody agreed with this ideal, it became clear that, if the community

participation concept was to become more comprehensible to all the participants, there was a need for a separate forum to conscientize people to understand the concept more comprehensively.

4.3.2 Second meeting: 10 March 1989

The meeting was held at the LDH offices in Lebowakgomo.

Under matters arising from previous minutes, WATERTEK reported that, prior to attendance at this meeting, an informal meeting had been held with the DBSA to discuss the proposed project. This resulted in attendance of this second meeting (10 March 1989) by a representative of the DBSA. The LDA reported that the LDEAP had shown interest in the project, but could not send a representative because of other commitments.

The LDA reiterated that a proposal to the DBSA was tabled for a detailed study of the Bolobedu district. This study would be the basis for selecting an optimum water supply strategy for the area. He stated that the department favoured a policy of piped water being brought to the edge of a village, while the village itself would be responsible for the distribution and reticulation of the water within the village. He said existing water supply methods and schemes would still be used and incorporated in any new scheme. He further emphasized the fact that people's aspirations for a tap in their homes should be taken into account.

WATERTEK gave some preliminary total cost estimates should the project involve a spring protection type scheme which would be subject to further developments. Their estimates were as follows:

Protection of a spring with a small tank:	R1 500
Piping retail costs @ R4.00 per metre:	R18 500
WATERTEK's involvement for the entire project:	R25 000
TOTAL	**R45 000**

The LDA undertook to assist with the provision of basic materials (cement etc.) for small spring protection schemes. DBSA mentioned that WATERTEK should only give costs of their involvement after they had been briefed by the Lebowa government.

Although it was not discussed, the LDH's delegates were not satisfied with the cost of WATERTEK's involvement. The Department also queried the kind of approach whereby it appeared that the type of water supply scheme to be implemented had already been decided even before the need assessment study had been carried out. The researcher indicated that the preliminary costs given were simply reflecting an order of magnitude for a similar project in KwaZulu. Therefore, this did not necessarily mean that a decision had already been made about the type of scheme to be implemented as this would depend on the need assessment study to be undertaken in the area. Furthermore, the researcher mentioned that, in accordance with what had been decided in the previous meeting, the survey should be carried out with a prior commitment to the water supply project by all parties concerned so as not to unnecessarily raise people's expectations. However, with a limited knowledge of the area and of the people there, the likelihood of a proposed scheme being readily accepted by communities seemed probable. With regard to the interview schedule, the researcher mentioned that there was a strong possibility of changing the approach to in-depth interviews because questionnaires often disregard important issues by people at the grassroots level. However, she said that further details would be announced at a later date.

Selection of appropriate village

It was agreed that an appropriate village for a pilot/demonstration project be selected. The LDA's engineer described the proposed regional water scheme for the area. This would be constructed downstream from the Bolobedu area, and then water would be pumped back up the two valleys. He further mentioned that even the existing village dams would be incorporated into the scheme. The LDH pointed out that such a scheme was very attractive but that it would take some years to implement. Therefore, it was important that the existing springs be protected in the interim so as to provide the people with a safe supply of water until the regional scheme had been implemented. The meeting agreed to this approach, including the development of wells along the river beds. It was further agreed that the project should concentrate firstly on water supply and that this should be followed with a sanitation programme, rather than both concurrently. It was also agreed that the final decision would be made by the end-users.

The regional health inspector reported that his contacts with some leaders since the last meeting regarding health problems and spring protection for the area had resulted in their keen interest in and great enthusiasm for the project. He further stated that, although in the past it had been taboo to fiddle with natural springs because people believed they have been installed by ancestors, the few instances of spring protection in the area had convinced communities that nothing untoward would happen to the spring. The community leaders, he said, were concerned about the lack of funds to improve water supply and sanitation.

The need to involve the existing Bolobedu Development Committee (BDC) in the area was raised and welcomed. However, it was agreed that their involvement should be minimal because of their already full schedules and

financial limitations. The Development Committees throughout the homeland had been established under the auspices of the Chief Minister's Department of Community Development. What happened was that this department encouraged community development by entrenching the power and authority of the chiefs and headmen. In most cases, these development committees were regarded as illegitimate because they disregard the existence of other structures within the communities. Another difficulty in the way of cooperation with this department was that it totally rejected the involvement of civic organisations and other such structures - despite their influence and legitimacy within communities. In order to maintain its apolitical stand in development issues, WATERTEK agreed to involve all structures in the community including the BDC.

It was further agreed that the delegates should carry out an on-site investigation of the villages and springs in consultation with the local leaders. The need for an appropriate size of a village to ensure validity of a sample was emphasized. The LDA reported that it intended to undertake a survey (socio-economic study) in order to implement a regional/bulk water supply scheme throughout the area. It was therefore decided that the negotiation team should preferably concentrate on one village only.

Requirements of the Development Bank

A representative from the DBSA pointed out that planning is the responsibility of the Lebowa government and is for Lebowa. He said that, in the case of a pilot project, one needs to know what the participants hope to achieve, that is, what results are expected and to what use will be made of these results. Another important point that needed consideration was whether or not a pilot project had been done before. If it had, it would not be repeated.

After receiving an application, a project team to help the applicant to draw up a final proposal would be put together at the DBSA. The choice of who to use as consultants on the project (WATERTEK, Lebowa Development Corporation, etc.) would be based on whether the professional and technical inputs in planning the project were sufficient to provide the answers to take a decision as to whether to go ahead with the project or not. The time-scale for obtaining DBSA approval could be as little as six weeks once a properly constituted proposal had been submitted.

Requirements of the Lebowa Government Departments

- Agriculture (Water Affairs Section)

  This department would support the practical and economic water project with manpower as far as possible. But community involvement would be vitally important.

- Health

  This department said that they would appreciate a letter from WATERTEK to the Secretary stating the nature of assistance required from the department. In principle, the department supported the proposed project.

- Economic Affairs and Planning
  They were not represented.

General

When asked what training was envisaged in the project, WATERTEK replied that, whereas the health officers in the field had been able to protect a few springs, it would be necessary to train someone from the

community to do this.

A request was made that an agenda for meetings be drawn up in consultation with all the parties involved. It was agreed that WATERTEK would continue to draw up the agenda while inputs were being submitted from other parties. WATERTEK undertook in addition to telex/ telefax the agenda beforehand to all parties. It was further requested that the minutes would be made available at an earlier stage and that WATERTEK would draw up a provisional proposal/application for financial assistance on behalf of the LDA to the DBSA, and submit it to the department before the next meeting which was held at Kgapane Hospital on 27 April 1989.

Conclusion

It was interesting to note the commitment of the LDA to this project and the emphasis which it laid on community participation. The DBSA's explanation of conditions and mechanisms for granting loans and its time scale were enlightening. Of great concern was the LDH's grumbling about the cost of WATERTEK's involvement in the project. This did not come as a surprise because, in most cases, public servants rarely know how much it costs the government in overheads to keep its personnel at work. Also, there are often misconceptions that, as a parastatal organization, WATERTEK would offer its services free of charge. Prior to the CSIR's change to a market-driven organization (which meant a cut in its parliamentary grant), the organization could offer its services free of charge. The change meant that WATERTEK would have to charge its clients for services. Hence, in this case, the Lebowa government who was using the DBSA's funds was expected to pay WATERTEK.

A situation of bad faith, although inexplicit, started emerging at this

meeting. Clearly, the Lebowa government never expected WATERTEK to charge for its involvement. The confusion regarding the need to pay WATERTEK for its involvement also stemmed from the fact that one section of WATERTEK provided water quality assurance to most homeland townships and proclaimed towns, including those in Lebowa, at no cost as its costs were covered by the defunct Department of Development Aid (DDA) and later the Transvaal Provincial Administration.

4.3.3 Third meeting: 27 April 1989

This meeting started with a visit by the delegates to the project area. Stops were made at three villages, namely Bodupe, Relela and Motupa.

The meeting was held at Kgapane hospital after the site visit. The chairman welcomed everyone to the meeting with a special word of welcome to the local magistrate who attended for the first time.

Under matters arising, it was noted that an engineer from the LDA was not present. His subordinate, however, reported that the department had not yet written a letter to the Department of Economic Affairs and Planning (DBSA's designated agent), but would do so in the very near future. The DBSA emphasized the urgency of this matter and urged the chairman to take it further. He said it was important to get the application to the Bank as soon as possible.

Discussion of the visit to project area

There was some discussion on the use and protection of springs in the area. The following points were emphasized:

- The present sources of water must be taken into consideration.

- Springs with a potential gravity supply should receive priority.

- Springs presently in use which are not suitable for gravity supply could be partially protected (not to the same standard as supply springs, but sufficiently to prevent contamination). This is for those situations where people may still prefer to draw water from the traditional source for convenience sake or in those cases where piped supply may be temporarily unavailable.

It was, however, emphasized that *the people of the village* should say what system they wished to have. The researcher suggested that viable options should first be assessed so as to enable the people to choose from the options given to them.

The senior health inspector noted that, on the Relela/Motupa side of the ridge, typhoid and diarrhoea were more prevalent than on the Molototsi side. It was agreed that Relela and Bodupe be considered as suitable villages for the pilot projects. This would be the first step in providing water to all communities in the region, as had been suggested by LDA in the previous meeting. With this in mind, however, initial planning should then be for all villages whereas the pilot project would be implemented in only one or two villages.

The DBSA reiterated the fact that, before a socio-feasibility/need assessment study continued, it was necessary for the LDEAP to be consulted and an application to be submitted to the Bank.

It was reported that the Secretary of LDA was aware of and in favour of the project. Details of personnel and time requirements would have to be confirmed at a later stage when details of the project were better known. However, the support already given indicated that the Department

agreed in principle with the project.

Draft proposal to the DBSA

WATERTEK reported that a draft proposal to the DBSA had been drawn up and submitted to the LDA. The latter had sent a telex to WATERTEK saying that the application was under consideration by this department. DBSA suggested the LDH take the one copy available and make copies for other committee members within the department. A copy would also be attached to the minutes.

Future plans

The meeting again stressed the need for the LDEAP to become involved before further steps could be taken. This was the only department through which funds from the DBSA could be accessed, that is , it was the designated agent of the DBSA. The chairman undertook to request this department make some progress before the next meeting.

A tentative date of 13 July 1989 for the next meeting, to be held at LDH, Lebowakgomo was set. This meeting was dependent on progress made with the Department of Economic Affairs and Planning, and with the Development Bank.

Conclusion

The absence of the LDA engineer at this meeting was of grave concern to WATERTEK. The fact that he had received a draft proposal for the DBSA funding in good time so as to be able to make comments to this meeting, but that he had said nothing other than that it was being considered/reviewed, and his inability to get the LDEAP committed to the

project, or even attend one meeting, had important implications for the success or failure of these negotiations.

4.3.4 Fourth meeting: 17 October 1989

A period of uncertainty

This meeting was scheduled for 13 July 1989 but did not take place because the secretary of the LDA had decided against processing the draft proposal to the Bank for funding. This message was telephonically conveyed to WATERTEK a day before the meeting, that is on 12 July 1989. Apparently the secretary of the Department was not aware of this planning process and therefore felt that he had been overlooked when a decision to apply for funding had been made to the DBSA. All along, WATERTEK was under the impression that the engineer for this department had the authority to make decisions. The problem therefore was that negotiations with the wrong person had been taking place. The secretary thought that this proposal would be a duplication of another already in progress because an application for funding of regional water schemes had already been submitted to the DBSA. Mention was made of the fact that the project planning had to be stopped. The researcher tried to contact the LDH to confirm this decision but all in vain.

Amid this confusion, WATERTEK wrote a well-documented letter to all parties concerned wherein it regretted the decision of the Lebowa departments to discontinue the project. It was further mentioned that WATERTEK would be available for involvement in future projects should the Lebowa government deem it necessary.

In a telephone conversation made to the LDH on 21 July 1989, the researcher established that this department waited in vain for delegates

from both the LDA and WATERTEK to attend the failed meeting. The researcher explained that WATERTEK had gained the impression that both departments had consulted with each other when a decision to stop the project was made. Clearly, the LDH was not informed regarding this decision. It was therefore agreed that another meeting be convened as soon as possible to iron out our misunderstandings and that a future plan of action be made. The researcher wrote a letter to all parties involved and urged that the planning committee should carry on, and that a date be set for the next meeting. This letter was followed by telephone calls and the meeting eventually took place on 17 October 1989.

Matters arising from the minutes

At this meeting, all parties except the LDEAP and the DBSA were represented. The DBSA sent an apology whereas the LDEAP promised to attend but did not attend the meeting. The chairman noted his thanks to those present for attending the meeting and for agreeing to continue to hold these meetings to enable the proposed project to get underway. The chairman emphasized that community work is not an easy task, and requires patience, tolerance and perseverance.

Comments from the LDH and LDA were given.

LDH commented as follows:

- The inspectorate section of the LDH had accepted the idea of protecting and improving small water supplies. They had been doing this in the past and were in ongoing close consultation with local chiefs and others.

- The envisaged project was somewhat bigger than what has already

been done. It included reservoirs and pipelines, and the possibility existed that it might be linked to a regional scheme at a later stage.

- As far as the cost mentioned in the proposal by WATERTEK was concerned, the department felt that, if money was available within the Lebowa Government Departments, the existing expertise in these departments was sufficient to construct tanks and instal pipelines without any need for external consultants. If, therefore, finance was available, this project could be done internally without the need to liaise with the LDEAP for DBSA funding.

LDA (Water Affairs) commented as follows:

- The department had certain reservations about WATERTEK's proposal to the DBSA. The assessment study of the needs in the area was of interest, but financial assistance to do this was also needed.

- The LDA had already submitted an application to the DBSA for a regional water supply scheme for the Bolobedu district. It was felt that the proposed project would be duplicating something already in progress.

- The professional fees suggested by the WATERTEK were high, and it was felt that they were not worth the service that would be provided. He further mentioned that spring protection was not a " high-tech" technology requiring external expertise. If funds were available, it could be implemented without the need for specialist inputs. There was also concern about the viability of this approach since some springs had been drying up (this was admittedly an exceptionally dry period).

- Usually the department approaches relevant consultants to do

whatever work they have planned. In this case the " consultants" WATERTEK had approached them with a project. This was an unusual situation.

The LDEAP was not represented and therefore no comments were received.

WATERTEK commented as follows:

- The CSIR appreciated that the expertise already existing in the relevant government departments could be utilized to implement such a project.

- The aims of the project were not to simply implement " low-tech" solutions to water supply, but also to build the capacity of the people so that they could take responsibility for projects themselves.

- The projects would serve as an interim water supply infrastructure which would be set up in the villages. This would fit in well with the LDA policy of delivering water to the edge of a village and allowing the community to take responsibility for their own reticulation and financing.

- The DBSA and many development organizations worldwide promoted projects which emphasized the development of the people together with the development of improved services.

- WATERTEK believed that it was important firstly to secure commitments from relevant government departments and to organize finance before raising the community's hopes in a need assessment study.

The LDH asked how far the application to the DBSA for the regional scheme had progressed. The LDA replied that the DBSA had asked the

department to prioritize all the applications which they had submitted. This implied that certain applications would be funded first and others would have to wait for funding in the years to follow.

The opinion was expressed that the interim water supply scheme proposed by WATERTEK was needed, but that the whole enterprise had been approached in the wrong way. It was first necessary to approach the people to ask them how they perceived their needs. The LDH noted, however, that the need was already clear: they needed a water supply, and they then asked whether WATERTEK was willing to do the study. The researcher replied in the affirmative but again suggested that possible sources of funding should be secured before carrying out the study so lest the people be imbued with unrealizable hopes.

Future plans

Various discussions and ideas on how to proceed from here were proposed:

- Begin with a small project.

  A study would be conducted in a specific community. Financial support would be arranged after completion of the study, after which more concise costs could be determined. WATERTEK would be compensated at that stage.

- WATERTEK arrange external financial assistance.

  After some discussion on WATERTEK financing, it was proposed that WATERTEK could seek external assistance for the project and work directly with the community. Some concern was expressed with regard

to this approach since it was felt that government departments should be involved.

- Reduce survey requirements.

  The Bolobedu regional health inspector suggested that, because water is such an important need in the area, it would not be necessary to ask the people what their needs are. Instead the people could be called together to a meeting and the project concept could be discussed with them as a group. The researcher confirmed that this approach is often used, although smaller focus group discussions which report to the larger meeting are preferred. The idea behind such an approach is that it permits less articulate people (such as women) to raise their ideas in small group discussions, rather than in big meetings. The LDA suggested that the Community Development Section of the Department of Economic Affairs and Planning should become involved in such a project.

- Look at other more needy areas.

  The LDH's new member to this committee noted that the people who were suffering the most were those communities further east towards

  the border with Gazankulu.
  These communities had no available water and it was felt that a beginning should be made with them.

- Lebowa government departments convene a meeting.

  It was suggested that a meeting between all relevant parties in the Lebowa Government be convened to discuss the issue. This would

include those departments already involved as well as the LDEAP, the Regional Head of the LDA, and the magistrate. It was agreed and this meeting be scheduled for 14 November 1989 at the offices of the LDA, Bolobedu. WATERTEK was requested to forward the minutes of the meeting before this date.

The Chairman requested WATERTEK to supply whatever information they had on other projects (KwaZulu) with which they were involved.

Conclusion

This was the most difficult phase of the project planning committee. All along, the dialogue among all parties involved in this committee had been running smoothly and this was thought to be promising. It was not until the submission of a draft proposal for the DBSA funding through the LDA that the situation started to become undialectical. Apparently the planning committee had been negotiating all along with the wrong person (engineer) from the department. The impression which he gave the committee was that he could authorize any project so long as he agreed to it. Another major pitfall which the committee experienced was that the concept of " appropriate technology" was often misconstrued to mean a cheap technology, rather than a technology that is socially acceptable and technically feasible.

It was further established that WATERTEK was the only driving force in the project, and this explained the oneway communication after the failure of the July meeting. The disruption of the committee was seen as a major setback by the LDH because it was only through these meetings that they could negotiate with the LDA for water supply projects. Hence they also urged WATERTEK to resume negotiations.

Another problem was that the LDEAP did not seem interested in the project. Until this meeting, several excuses were given for their absence despite promises to attend. The LDA seemed to have more trust in the LDEAP's Community Development Section, the body which normally undertakes surveys for Lebowa as a whole.

Although WATERTEK, and in particular its researcher, was capable of undertaking need assessment/socio-feasibility study, the LDA felt there was a need to involve the LDEAP in the project. On the other hand, the researcher had a feeling that the latter departments' staff would use the undialogical approach as they relied solely on questionnaire surveys to assess the needs of people.

Comments by both departments at the meeting had shown that there was sufficient expertise available to undertake projects of this nature. Little however had been done by either department to address the needs of those communities without potable water supply. Seemingly, the LDH had hoped that the LDA would authorize funds so they (the LDH) could carry out the water supply projects in the area. Unfortunately, there were no indications to the effect that funds would be made available for such projects.

Ironically, the LDA normally frequently authorizes projects worth millions of rand for water supply even to one village, but then complained about the R25 000 professional fee charged by WATERTEK for its involvement over a specified period because " appropriate technology" is often regarded as a cheap technology that demands no special expertise. That it was unusual for the department to be approached by consultants, rather than for them to approach the consultants, clearly indicated their lack of understanding of the proposed dialogical approach by WATERTEK.

Although it was not clear during the ensuing dialogue what role WATER-TEK would play, it was clear that both departments thought they could play an important role in this project. The fact is that both departments had never been involved in any community participation project, nor did they possess the expertise to undertake such projects. They therefore perceived WATERTEK as a relevant organization which might do so. During the ensuing dialogue, both departments also realized that they had suffered a communication breakdown, and so they decided to hold their own brainstorming meeting.

4.3.5 The policy makers' meeting held at the LDA Conference Hall in Kgapane: November 1989

Present at the meeting were representatives from the LDA (Water Affairs), the LDH, the LDEAP and the Department of Justice (a magistrate).

The purpose of this meeting was to discuss the possibility of involving WATERTEK in water projects. The members felt that the professional fees required by WATERTEK were rather too high, since the government officers already knew how to protect water sources but unfortunately could not do so due to lack of funds. The government was not prepared (as was originally hoped) to compensate WATERTEK. A representative from the LDEAP indicated that he had had the impression all along that WATERTEK had all the funds they needed to assist them, but if the government would be responsible for the refund of money (the DBSA's loan) it would not be possible at that stage.

The LDA indicated that WATERTEK should rather secure private sponsorship for such a project. It was further said that the application made to the DBSA for funds was a regional water scheme and that, as such, was a long-term project involving many millions of rands. A

suggestion was made that a separate application for a grant should be made in the interim.

The magistrate mentioned that he understood that the project concerned springs, but he questioned what would happen to areas where there were no springs. Responding to this question, the LDA explained the department's long-term plan that involved areas that are not blessed with springs.

The government departments agreed to mobilize the community in order to establish a committee so that WATERTEK could get the green light to look for private funders. It was further agreed that the committee should be responsible for applications for funding.

In a follow-up made by the LDH regarding the role of the LDEAP, the latter explained that this department played the role of a co-ordinator, especially in processing applications for loans with the DBSA. These involved water projects in the whole Lebowa (which included Bolobedu). It was further indicated that the department had not received an application for a grant to undertake spring protection projects.

A suggestion was made that the LDA should take the lead in convening a meeting with a community. After long deliberations it was agreed that the LDH be the convenor. It was further agreed that an interdepartmental action committee be constituted by local government representatives. This committee would be accountable to this meeting. Five committee members were elected.

The meeting agreed to thank WATERTEK for the role which they had played and that they should be informed that their assistance would be required when the need arose. A letter to this effect was forwarded but

only reached WATERTEK in January 1990.

Conclusion

The most important outcome of this meeting was that, having amicably discussed the project, the Lebowa government departments had come to realize that they needed one another to resolve the water supply problems in Bolobedu. Their determination to organize or mobilize the communities to improve their water sources and sanitation and so limit WATERTEK's involvement to a minimum, was commendable. There was, however, serious cause for concern to the researcher as she preferred to be involved in *all* phases of the project, so she could be conversant with all the problems and aspirations of the community, rather than just the fund-raising phase of the project. However, it was important to step back from the project and see how the plans of the government departments would be put into action.

Surprisingly, despite the LDEAP's failure to attend previous meetings, they managed to attend this meeting because only the policy makers were present. This was another indication of the department's avoidance of WATERTEK.

4.3.6 Fifth meeting: 5 June 1990

More than eight months lapsed between the fourth meeting and this meeting, which took place at Kgapane Hospital. In the meantime, transactions such as applications to fund WATERTEK's involvement took place (discussion following). In matters arising from the interdepartmental meeting, it was made clear that the interdepartmental action committee should liaise with the community and form " Water Committees". The five-

man interdepartmental committee were not able to meet after its establishment because members were occupied with other line duties.

Some members felt that the committee should have had a backing in the form of funds in order to succeed in their task. The members anticipated problems in securing funds from the government and it was suggested that the local government should be approached for financial assistance through the magistrate's office.

It was also suggested that a revolving project fund be established whereby the community could refund the money. The idea was welcomed with some reservation because of the political upheavals which were then prevalent in the country.

Tentative dates for the task committee members were given. In view of lack of progress by the task committee over the previous eight months or so, the researcher negotiated WATERTEK's involvement in the mobilization of the community and this was agreed to.

In conclusion, it was obvious that there was more lip service than action in this committee. For instance, the interdepartmental task committee never met during the eight months after its inception. Agreements were made without proper follow-ups. To date, none of the resolutions had been implemented. Thus WATERTEK's involvement in community involvement and applications for funding to get the project off the ground, were seen as vitally important.

4.4 NEGOTIATIONS WITH THE COMMUNITY

Despite the fact that the intended beneficiaries were the third category of key role players in the dialogical process, meaningful consultation with them was

undertaken last. The reason for this was to ensure continuity of the process and to avoid cessation of the project because funds were insufficient to keep the theorists/ scientists visiting the community. During this phase, therefore, negotiation with the community was limited to the chief, the Lebowa Legislative Assembly (LLA) member, and the government extension officers who lived and worked near the community. However, due to the Programme for Development Research's (Prodder) delay in responding to our proposal, the process of negotiations with the community at large was delayed until August 1990. Because Relela was already identified for a pilot project by WATERTEK, and Lebowa government planning committee, and was confirmed by the chief during our January meeting, the researcher was introduced to the LLA member resident in this area for further assistance. Details of negotiations with this leader and the community are discussed in the next chapter.

4.5 FINANCIAL SUPPORT FOR INTERVENTION: SPONSORSHIP FOR THE CSIR's INVOLVEMENT

As indicated earlier, funders are the fourth category of role players in the dialogical process for the successful intervention in a project of this nature. However, it should be mentioned that it became imperative to secure funds for the theorists' involvement, even prior to negotiations with the community. Hence, funding is discussed here. It should also be noted that there was some overlap in the processes of negotiation with the sponsors and the intended beneficiaries.

While awaiting some action from the interdepartmental task committee formed in November 1989, the researcher decided to secure sponsorship to enable WATERTEK to undertake the project. The researcher also felt that negotiations with the community were long overdue - apart from which the Lebowa government had no funds to put into the project. Based on this premise, it was imperative to adopt a different approach towards the project. Should

WATERTEK secure funds for its involvement, the next step would be dialogical intervention in the community in order to raise their consciousness, and together seek solutions to the problem. The community would then be given guidance on writing proposals for funding so they could raise project funds from the private sector.

Together with other members of WATERTEK, the researcher approached the Programme for Development Research (Prodder) of the Human Sciences Research Council (HSRC) for possible funding. Prodder showed a great interest in a project of this nature and recommended that a proposal be submitted.

Early in January 1990, a visit was undertaken to the study area by the researcher and one of the engineers from WATERTEK to do a pre-feasibility study with view to drafting a funding proposal for Prodder. The regional health inspector toured the area with us and also introduced us to Chief Michael Modjadji, his councillors and to other community leaders. All welcomed the idea of a water project and gave us their blessing to tour the area for pre-feasibility study. In order to reduce the possibility of raising unnecessary expectations prior to securing of funds for research, negotiations were limited to the community leaders during this visit.

While in the area, the senior health inspector contacted the regional inspector and accused him of involving WATERTEK in the project without prospects for funding. He apparently suspected that WATERTEK might claim compensation for their involvement from the government. The regional inspector tried, without success, to explain WATERTEK's position. WATERTEK then wrote a letter to the senior health inspector and explained that there was the possibility of securing sponsorship for the research programme. However, WATERTEK urged the Lebowa government to apply for a grant from the DBSA - as had been resolved by the interdepartmental meeting for the

construction of the project.

A proposal was submitted to Prodder for consideration in the new financial year, April 1991 (see Appendix D). In mid-April 1991, Prodder phoned to inform WATERTEK that funding has been approved. We were told that we would be formerly informed about the details as soon as the high ranking authorities of the HSRC had endorsed it. In follow-up calls, the researcher was reassured that funds were available, but she was told that she needed to be patient as the next Board meeting would only be held on 10 June 1990. It was only on 15 June 1990 that the researcher established that Prodder had not approved funds because of the rationalization of the HSRC (which had also affected Prodder's position). Prodder referred our proposal to the Department of Development Aid (DDA) for funding.

In a state of despair, the researcher sent out approximately sixty proposals for funding. Among all potential sponsors, a few responded positively, many did not respond at all, and a few would not fund the research programme but would fund the projects/communities directly. Details of responses from a few of the sponsors who showed interest follow.

4.5.1 The Department of Development Aid

The DDA approached WATERTEK to submit a proposal for funding. A proposal was then forwarded. The DDA was very interested and had the money to invest in this project. However, this department operated along similar lines to the DBSA, namely that application for funding had to be made via the Lebowa government. The DDA took the initiative of contacting the Secretary of the LDA. The latter did not have any problem just so long as the funds did not come out of the LDA coffers. The Secretary was requested to submit a proposal to the DDA as soon as possible. Unfortunately, there had been a lot of delays in getting the

proposal to the DDA because of strikes by public servants in Lebowa. The DDA followed the matter up with the Lebowa government early in 1991. The latter refused to approve funds for research and persuaded the DDA to direct these funds to the department for implementation of the project.

Apparently, the DDA explained that funds available were specifically geared for research and not construction. The DDA asked the Lebowa government to decide what should be done. Our contact person at the DDA also requested WATERTEK to approach the Lebowa government to give them the green light to approve funding. This was done to no avail. Eventually, the DDA's funds dried up, and in August 1991 they informed the researcher that no funds would be made available to WATERTEK.

4.5.2 South African Breweries (SAB)

Two applications were made to two divisions of the South African Breweries (SAB) namely, the Community Projects and Social Development Committee. Detailed discussions about the project were held with the Community Project Manager who indicated a keen interest in funding the project. However, this division needed to be assured in advance that the community was committed to the project.

The Social Development Committee Division on the one hand awarded WATERTEK R10 000 for research and recommended the further submission of a proposal and reports on particular projects with a view to financing in the new financial year.

4.5.3 Blue Circle Limited

While this organization was unable to sponsor the research programme,

they were prepared to make an in-kind contribution in the event of the construction of the water supply scheme taking place. The researcher therefore contacted them for assistance with the supply of cement and construction aggregates as soon as the project approached implementation.

4.5.4 Liberty Life Group Community Fund

This organization's policy was also against supporting research programmes. They were, however, interested in assisting in the installation of facilities. They recommended the submission of a proposal so they could consider financial contribution for that purpose.

4.5.5 Itireleng Educational Fund

The Itireleng Educational Fund is a subsidiary organization of the South African Council of Churches and it is responsible for sponsoring black university/ tertiary education students. Although this organization could not offer financial assistance for the project, it helped WATERTEK to get in touch with the National Progressive Primary Health Care Network (NPPHC). One of the latter's most important aims is to create a forum for individuals and organizations involved in health care and development programmes, to share their expertise and experience as well as to learn from one another.

Of vital importance in progressive organizations such as NPPHC is the credibility they have with most black communities countrywide. Besides, it is even much easier for these organizations to secure foreign social responsibility funds than it is for WATERTEK. This organization also has a managerial, administrative and other developmental training section called Intermediate Technology and Small Industrial Unit (ITSIDU). This

section trains communities with view to taking responsibilities for their own programmes - an important precondition for the sustainability of community-managed projects.

In the past, these organizations had not been able to work with the CSIR and other parastatal/government organizations. However, since the unbanning of political organizations such as the African National Congress, the Pan Africanist Congress and the South African Communist Party in February 1990, the NPPHC has had an open policy towards networking with all organizations. They believe that together we can build a new progressive and democratic South Africa.

A sound working relationship has been established with the NPPHC and together we mobilized the community to improve its water supply and sanitation.

Through this organization, an application for sponsorship was made to the Kaizer Foundation, a foreign and American funding organization specializing particularly in health projects. It was therefore hoped that funds would be made available for this project by this organization.

4.5.6 The Anglo American and De Beer Chairman's Fund

Anglo American and De Beer Chairman's fund made an amount of R30 000 available for the research programme.

4.5.7 Johannesburg Consolidated Investment Company

The Johannesburg Consolidated Investment Company (JCI) group donated an amount of R8 000 to assist in spring protection. This money was deposited into the community's account.

Conclusion

Although only two funders made positive moves in terms of funding, there were great prospects for additional funding in the new financial year. The Department of Development Aid in particular could become the main sponsor. Should extra funds be secured, the project would be expanded to other neighbouring villages.

4.6 CONCLUSION

The main emphasis of this chapter has been to demonstate the complexity of necessary negotiations between the theorists and the policy makers as two key role players in the dialogical process. This dialogue was extended to include dialogue between the theorists and the funders, and less so to include the intended beneficiaries (which represent the other two role players in the dialogical process). It was of the utmost importance for the theorists to secure the commitment of both the policy makers and funders prior to raising the expectations of intended beneficiaries. The researcher aimed to ensure the continuity of the project, that is, the facilitation or intervention role of the theorists, without fearing a possible disruption of the dialogical process because funds were not available.

Negotiations to undertake a community-based water supply and sanitation project with high-level government officials can be an overly time-consuming and often frustrating exercise. This is partly because of the bureaucratic nature of the government as well as their misconceptions about the appropriate technological solutions. The government's failure to recognise WATERTEK's change to a market-driven organization, which meant that they had to secure funds from sources other than the parliamentary grant which they had enjoyed over the previous 40 years or so, was seen as a reason for the failure of these negotiations.

neglected by development experts and this is the reason for the unprecedented collapse of many past projects.

In this chapter, the dynamics of three case studies of projects undertaken by the Appropriate Technology Group, WATERTEK, CSIR since 1988 until the present are presented. The key concepts relate to the humanist approach to development, that is, negotiation/dialogue, need assessment, community participation, community-based management and appropriate technology have been adhered to as much as possible in these case studies. These are the processes that could make development projects successful - as has been demonstrated in the following three case studies.

It should be noted, however, that, though all three case studies intended to deal with sanitation improvement, no significant steps have been taken to construct latrines in all case studies. Hence, rather than discussing this aspect in each case study presentation, the researcher felt it would suffice to discuss the overall sanitation effort as a subsection of this chapter.

5.2 CASE STUDY 1: RELELA WATER SUPPLY

5.2.1 Introduction

Relela is one of the rural villages in Modjadji, Bolobedu, which falls under the jurisdiction of the Chieftainess Kgosigadi Modjadji - the Rain Queen. The village lies approximately 25 killometres north-east of Duiwelskloof. Although fountains and streams abound all over the settlement, potable drinking water is a problem.

The dynamics of this study are discussed in what follows.

5.2.2 Rationale for undertaking a pilot project

As discussed in the previous chapter, the follow-up reconnaissance visit to the area confirmed that water supply and sanitation facilities were rudimentary. Furthermore, statistics supplied by the hospital staff, and tests undertaken by WATERTEK engineers using portable test equipment, revealed a high bacteriological content in the water. Hence, the high incidence of typhoid and other sanitation-related diseases.

It was also established that, in the village of Relela in the district, water for domestic use is obtained from a dam, from the Nwanedzi River, and from various small springs and tributaries to the river. All these sources are bacteriologically polluted. Hygiene practices are poor and very few homes have toilets. This village, having no access to improved water supplies, experiences the highest rates of water- and sanitation-related diseases in the area. The number of cases admitted at Kgapane Hospital, which serves a population of approximately 25 000 people, was as follows:

TABLE 5.1: CASES ADMITTED TO KGAPANE HOSPITAL.

DISEASE	AVERAGE NO. OF CASES PER MONTH	PERIOD
typhoid	70	Jan '87 - May '88
gastroenteritis	60	Jan '88 - May '88
trachoma	355	Apr '88 - Jun '88

N.B. The official statistics for 1989/94 were not available during the compilation of this report. However, personal communications with hospital authorities indicated that a similar trend still prevails.

5.2.3 Negotiations

5.2.3.1 Negotiations with the organizations involved

In view of the collapse of negotiations between the Lebowa government and WATERTEK as well as the interdepartmental task committee's lack of progress in raising the community's consciousness in the approximately eight months after its inception (discussed in chapter 4), the researcher negotiated her involvement in dialogical intervention with the intended beneficiaries. Together with the interdepartmental task committee, in particular the senior health inspector, dialogue was initiated with the community. An additional organization which assisted the team was the National Progressive Primary Health Care Network (NPPHC). To reiterate, the main aim of this organization is to create a forum for individuals and organizations involved in health care and development programmes, and to share their expertise and experience, and to learn from one another.

5.2.3.2 Negotiations with the intended beneficiaries

Regrettably, negotiations to jointly undertake a pilot project with the Lebowa government (i.e. policy makers according to Berger's three categories identified in chapter 4), lasted for almost two years before dialogue was initiated with the community. These negotiations ended in what Berger (1969: 92) refers to as undialectical consciousness, and the condition of alienation (discussed in chapter 2). As discussed earlier, a stalemate was reached when the Lebowa government, through its Development Bank's Designated Agent, the Department of Economic Affairs and Planning, which was refused to process a loan because they deemed the project based on

appropriate technology principles, to be too expensive. In view of the sponsorship for the research programme (as stated in chapter 4), the researcher was in a position to facilitate the development process with the community. The idea was to conscientize the community and assist them in raising funds for the water project.

Against this background, negotiations with the community started in earnest in August 1990. The process was as follows:

- **Tribal Authority and other community leaders**

Together with the regional health inspector, the researcher initiated dialogue with the Kgosi/Chief Michael Modjadji of Bolobedu. The Kgosi welcomed these initiatives and referred us to the local tona/headman, the Lebowa Legislative Assembly (LLA) member and the chairman of the Bolobedu Development Committee (BDC) for further assistance.

In a dialogue with each of the above-mentioned community leaders, it was found that they all welcomed the idea with great enthusiasm and added that intervention of this nature was long overdue. The LLA member undertook to convene a community meeting to discuss the proposed project.

- **First community meeting**

At this meeting, which was held at a school on 19 August 1990, there were representatives of the Departments of Health and Justice (magistrate), the community and WATERTEK. Despite the fact that they are members of the interdepartmental task force, the Departments of Economic Affairs and Agriculture were not

represented.

The regional health inspector introduced the proposed project to the community, and explained how we anticipated going about it, emphasizing also the importance of community participation. Given the opportunity to add a contribution, the researcher elaborated on the necessity of the fact that we did not intend to improve water supply "for" the people but rather "with" the people. The importance of moving away from the paternalistic dependency syndrome to a more humane participatory development was emphasized.

Furthermore, the researcher explained that the high incidence of typhoid in Relela was the main reason behind its prioritization for a pilot project (see paragraph 5.1 in this regard).

Responding to the proposed suggestion, the community mentioned that the provision of water supply is the responsibility of the government. Besides, the regional water scheme was on its way to Bolobedu. Together with the government representatives, the researcher explained the time scale for regional water schemes as being between five and ten years.

The community, particularly the young comrades, urged WATERTEK to obtain funds from the government to instal the proposed water scheme in the area or else quit the village. The main concern of the community was poverty. They mentioned that the community was struggling to build classes for primary school children. Also, the fact that the Kgosi's kraal is well served with water was a worrying factor. A heated argument centred around community involvement in the project ensued, with some pledging to cooperate while others said they are not prepared to cooperate. Clearly, the community was

disillusioned and angry with the Lebowa government's lack of commitment to improving their water situation. As a result, they associated the government with WATERTEK.

In response to these sentiments, the researcher acknowledged the community's concerns. However, she explained that her own organization was not a part of the Lebowa government, nor could it influence the latter to accede to the community's demands. Furthermore, the researcher informed the community that it was not WATERTEK's intention to "impose" projects onto the community but to work "with" them. She added that dialogue was essential for the success of any project. Therefore, the community had the right to reject or accept the proposed project. After long deliberations, one of the Civic Association's youths stood up and said the community would like to have nothing to do with the project. WATERTEK should, therefore, pull out of the community.

Having said that, a handful of women, who had been reticent during the entire dialogue, stood up and strongly objected to the decision that the CSIR should withdraw from the community. These women, mentioned that, as the water drawers, they suffered the most. They further mentioned that they virtually sleep at water points until midnight or have to walk long distances for water while men have nothing to worry about. A suggestion was, therefore, made that the proposed project should go on. After his had been said, none of the youths or Civic Association members had any objection to the women's decision. Clearly, the legacy of paternalistic approaches to development still exist. People were more dependent on the government for assistance because their efforts to help themselves were often stifled by existing legislation which prevented people from repairing pumps themselves.

Basically, all agreed that the proposed project was essential. A dialogue ensued about details of the project. However, the community decided to hold a more representative (more woman and indunas) meeting in which WATERTEK would present the proposal. For the sake of encouraging commitment and independent thinking by the community, the researcher suggested that WATERTEK absent themselves, and they would be invited back if the community deemed it necessary.

- **Follow-up community meetings**

Five community meetings were held in the absence of WATERTEK, CSIR. Apparently, several women who attended the meetings expressed appreciation of and showed deep interest in such a project. The women complained about the long hours they had to congregate at the water wells to draw the polluted water which they share with animals. Mention was also made of the fact that women perpetually quarrel because of long queues at the water points. It was also stated that virtually no single school in the area was provided with water. The community felt they could no longer watch the situation and lament, but should rather search together for solutions. The women in particular said that, at long last, practical steps and plans seemed to be afoot to alleviate their water supply hardships.

It was agreed that two representatives of the Bolobedu Water Co-ordination Committee (BWCC) be elected from each village, there being 15 villages in the area. It was also unanimously agreed that the envisaged committee should meet regularly and liaise with WATERTEK. Having analysed their own problems, the community came to the conclusion that, though voluntary labour is abundant,

finance is a problem because they are still currently struggling to get schools built.

In subsequent meetings, the BWCC, comprising approximately 30 members, was constituted and feedback was given to WATERTEK. In contrast to the planning committee's (CSIR/theorists and government/policy makers) original plan, the community decided to form a rather big committee (normally, water committees comprise of up to 10 members) comprising two representatives from each of the fifteen villages around Relela. However, this committee was established with the full understanding of the fact that initially, a pilot project was to be implemented in Relela, and would be extended to other villages in future. This committee is now responsible for coordinating water and sanitation development projects in the whole area. The committee opened a Trust Account with the local magistrate of Kgapane.

5.2.3.3 Negotiations with the funders

Mention was made in the previous chapter that the SAB's Community Projects Division (paragraph 4.4.2 in chapter 4) expressed a keen interest in funding the community on condition that the latter was committed and would be accountable for funds donated, rather than fund the research programme. However, the SAB would not fund the community if no representative committee was established. After establishing a representative committee, the SAB was informed, and they in turn suggested a meeting with the BWCC.

This meeting was attended by WATERTEK, NPPHC, as well as the Department of Health on Sunday 14 October 1990. The purpose of

this meeting was to introduce the SAB to the community so that they could listen to the latter's problems and consider financial assistance. Due to unforeseen circumstances, the SAB failed to attend the meeting. The community was very disappointed and despondent. They urged WATERTEK to express their disappointment to the SAB. WATERTEK gave the community leaders a telephone number for SAB's Manager of Community Projects to follow the matter up. A brief explanation of the criteria used by this organization for sponsoring projects was made by the researcher.

After a brief explanation of the role which the NPPHC could play in the proposed project, as stated in the previous chapter, it was reiterated that both the community and WATERTEK should contact the SAB and request them to attend the meeting. This time the community was prepared to hold a meeting at any time and on any day of the week.

As agreed, several calls were made by both parties to reinvite the SAB to the meeting.

- **Follow-up meeting with SAB**

Eventually, the SAB managed to attend the meeting on 16 November 1990. The SAB delegation was more than three hours behind schedule. In spite of the latter, the community did not give up hope but waited. Two representatives of the BWCC explained the community's problems with regard to water supply and requested the SAB to consider their application for sponsorship. WATERTEK elaborated on the technical aspects as well as the projected financial implications of the project.

In response to what was said, the SAB commended the community for their courage and commitment to improve their own living conditions. An explanation of the SAB's criteria used in sponsoring development projects was also made. Mention was also made by the SAB that the community was ready for sponsorship. However, the organization expressed shock at the cost of the project. They mentioned that, as far as water supply is concerned, they normally sponsor borehole installations worth approximately R25 000. WATERTEK explained the difference between those projects and the proposed project. It was explained that the proposed pilot project not only aims at providing people with potable water, but they also aim at reducing the distance and loads of water which women have to carry on the daily basis. Besides, the type of scheme envisaged would more easily be incorporated in future bulk water supply (it is upgradable).

In conclusion, the SAB mentioned that they would recommend the project to the Management Committee for consideration.

5.2.3.4 Summary of negotiations

In spite of the fact that the community was a bit resistent to getting involved in a project which demanded their in-kind and financial contributions, their subsequent response to the project was quite encouraging. The most exciting development was the enthusiasm and commitment the community showed by convening five meetings independently of WATERTEK. Another aspect of great interest is the fact that, at these meetings, the community managed to identify their own needs, analysed their financial constraints, and decided on the election of a Water Coordination Committee instead of a Water Committee for just one village. The danger of going into a

community with preconceived ideas was illustrated in this project. As with other projects, WATERTEK expected a committee that would only represent a study village. The community on the one hand had different perceptions of the project. Their rationale for the BWCC was to try and address the needs of all people in the area rather than just a minority. Apparently, what would happen was that the BWCC would facilitate all water supply development schemes while the subcommittees would look into village level schemes.

Despite the fact that the community might not be in a position to contribute a nominal amount for capital costs, they were prepared to contribute unpaid labour towards the implementation of the project. Apparently, the operation and maintenance of the scheme would not be a problem. It was, therefore, important that the community be assisted in securing sponsorship to get the scheme off the ground.

Notwithstanding the fact that the community was enthusiastic and very motivated about the project, it was felt that a socio-technical feasibility study to establish the needs, particularly of the women, and feasible technical options for water supply and sanitation in the area, be undertaken. The researcher felt it was important to undertake a need assessment study to ensure that the minority groups understand and support the project proposal. These options would be explained to the community at a later stage for decision making and choice. Besides helping the community to make an informed choice, the feasibility study is an invaluable document or instrument for fund raising.

5.2.4 Need assessment

The study was divided into qualitative and quantitative data collection and the results are reported thus:

5.2.4.1 Qualitative data

The in-depth dialogue with different groups started with the researcher introducing a colleague and herself, and asking all participants to introduce themselves. To avoid the unnecessary raising of expectations of participants, the researcher explained that WATERTEK's involvement is limited to water supply and sanitation development. However, participants were welcome to raise any other development issues which could be referred to relevant organizations for further attention. As an ice-breaker, flip charts on health, hygiene and sanitation situation and improvements were shown and discussed. Participants were asked to comment on these visual materials in relation to their own water supply and sanitation situation.

The outcome of these in-depth group discussions are categorized into four parts as follows:

Perceptions on water supply and sanitation

All groups identified a variety of problems associated with water and sanitation. These problems include:

- ***Unprotected Sources:*** Participants mentioned that their main sources of water supply were a dam, streams, springs and wells. All these sources are unprotected and are therefore polluted by

human and animal excreta, vehicle oils and donkey carts. Because animals wash and wade in these sources, the water is murky, muddy and turbid. Participants were also convinced that the water was polluted with bacteria which caused the high incidence of waterborne diseases experienced by the community in the area. Also, the water had suspended solids which necessitated sifting by users.

- ***Distance and insufficient supply:*** Distances to the water sources were thought to be too long. People queue for up to 10 hours before their turns come and sometimes have to go back home without water. Because of this, people often clash and fight at the water source.

- ***Crime:*** Because women spend long hours at the water source, they get back home in the evenings, and are often attacked and sometimes raped.

- ***Energy to boil water:*** Although participants appreciated the fact that boiling water would kill germs, they suffered from a scarcity of firewood. Besides, this practice was also felt to be overly time-consuming.

- ***Water scarcity:*** Some villages were said to have no water at all, and therefore had to purchase water at 50 cents per 25 litre container.

- ***Sanitary facilities:*** The lack of sanitary facilities, that is, toilets, also contributed to environmental and water pollution. Participants mentioned that most households either had no toilet at all, or whatever toilet they had was not of a good quality. As a result,

people used bushes to dispose of their excreta.

- ***Typhoid:*** The high incidence of typhoid was a cause of serious concern because families spend their meagre income transporting patients to hospitals as well as paying for medication.

- ***Vegetable gardens:*** Due to water shortage, community members are unable to cultivate vegetable gardens. This is a problem because they always then have to buy vegetables.

Perceptions about solutions (water supply)

Proposals about the possible solution to the problems identified by all groups are as follows:

- ***Government assistance:*** Most participants felt that the government should build a treatment plant at the local dam, and instal the reticulation system closer to their homes.

- ***Community contribution:*** It was also felt that, to a lesser extent, the community could contribute money to cover the capital costs of the project. However, voluntary labour during the construction of the scheme would definitely be contributed. The concept of community contribution of in-kind labour was already entrenched in building schools and roads. The community would also contribute towards the operation and maintenance of the scheme.

- ***Extension of a pilot project:*** Although the community fully supported the idea of a pilot/demonstration project, there was a general feeling that such developments should be spread to other

villages in the area.

- ***Health and technical education:*** Participants experienced a need for health and hygiene education.

  The need to demonstrate the use of taps, particularly to elderly people who had never been exposed to them, was also referred to.

- ***Witchcraft/superstition:*** It also became evident that the community lives in dread of witchcraft. This was expressed in a dialogue about the use of rainwater tanks for obtaining water. They strongly feel that this is not a solution because of possible poisoning.

Sanitation

When they were asked what arrangements could be made to promote sanitation, by using, for example, the VIP latrines, they responded thus:

- ***Training:*** There is a need to train some interested entrepreneurs from the community to build these latrines in a cost effective manner. The community also suggested that prototype latrines could be built at the headman's house or at the mobile clinic's site. The idea is for the community to use the latrines and evaluate their advantages and disadvantages.

- ***Construction:*** It was suggested that a water project precede sanitation, and that trained entrepreneurs would build latrines at cost for families in need of them. Another suggestion was that

fund raising for the subsidization of the very poor families needed to be made.

- ***Institutional aspects:*** When they were asked how the project could be managed both during implementation and subsequently, the community responded thus:

  The community is unified by a strong Civic Association and the BWCC. Each village must elect sub-committees and sideline the indunas and chief, who for ages have always failed to come up with any viable development projects. As for the labour contribution during construction, it was agreed that a fixed amount of money be paid by those who would not contribute labour so as to pay those who would. This was important as it might create once-off job opportunities for the unemployed.

  Participants also felt that operation and maintenance of the water scheme should rest with the community. It was unanimously agreed that the money raised externally would be deposited into the Magistrate's Trust account for easy control. In order to solve the non-payment problem often experienced in projects of this nature, it was resolved that the youths (comrades) be involved as much as possible. Apparently, if this group is convinced about the importance of the project, they will ensure support (be it voluntary or forceful) by individual families.

5.2.4.2 Quantitative data

In spite of the fact that quantitative data (see Appendix A) was collected in this phase, there are some overlaps with qualitative information, as illustrated in the following report:

Biographical information

Although most respondents came from Relela, the pilot study village, and its immediate neighbouring villages namely, Bokhuta and Motlhakong, quite a few respondents, ranging from between one and five, came from the rest of the twelve villages. The methodological framework has already been discussed in chapter 3.

Of the sampled respondents, 70% were males and 30% females. This was unlike our previous rural studies where approximately 90% of respondents would be females rather than males. This changing trend is attributed to the fact that Tzaneen, a newly industrialized town, is expanding rapidly and there are more job opportunities for local people. A significant number of men no longer migrate to big cities for work but commute daily to work. It was also encouraging to note that 83% versus 17% of the sampled households were headed by males, that is, sons or husbands. The relationship of other respondents to male heads of households was either wives, daughters, grandparents or grandchildren.

Table 5.2 summarizes the ages of heads of households compared with the ages of respondents. Most respondents were between 15 and 24 years of age, while most heads of households were aged 45 years and above.

TABLE 5.2: AGES OF HEADS OF HOUSEHOLDS AND RESPONDENTS

AGE GROUP (YEARS)	PERCENTAGE	
	HEAD OF HOUSEHOLD	RESPONDENTS
15 - 24	5	40
25 - 34	8	25
35 - 44	35	10
45 and above	52	25

90% of the total respondents were Sotho-speaking, 9% were Tsonga and only 1% were Venda. As for the literacy level of head of households, it was established that 34% never attended school, 23% attended up to standard 5, 18% up to standard 2, 16% up to standard 8, and 9% had matriculated and had tertiary education. The educational level of respondents, most of whom were the youths, shows a dramatic difference from that of heads of households. This encouraging trend shows the improvement in the literacy level of the communities in the study area.Of the sampled respondents, 26% were either doing matric, 25% had up to standard 8 education, 15% up to standard 5, 15% never attended school,13% up to standard 2 and 6% had matric plus tertiary education.

Water sources and quantity used

There are two main sources of drinking water, namely the hand-dug wells, and streams/rivers. These sources supply 83%. However, it should be noted that all wells are in dry river beds. These two sources could therefore be combined. A few boreholes, springs, rainwater catchment systems and a dam are used by 17% of the total households.

The average family size is 7 persons and the daily household and per capita water usage is as follows:

TABLE 5.3: AVERAGE HOUSEHOLD AND PER CAPITA WATER USAGE

SEASON	MEAN DEMAND	
	HOUSEHOLD	PER CAPITA
Summer	73 litres	11 litres
Winter	60 litres	9 litres

In Ndwedwe, KwaZulu, an area for the two case studies to be discussed in this thesis, the average household and per capita usage is 93 litres and 13 litres respectively (Appropriate Technology Programme, 1989: 3). Due to the population density, distances to water sources, and the water shortage in Relela, water usage is slightly lower there than in Ndwedwe. However, in both areas, usage is far below the United Nations' IDWSSD (1981 - 1990) recommended figure of 50 litres per capita per day. There is, therefore, a large need to improve water supply in rural areas if the UN's goal is to be achieved.

Water quality and health

When asked about problems experienced with water supply, 50% of respondents mentioned communal fights or clashes, pollution, inadequate supply, long queues, and hours spent waiting for water, while 30% mentioned pollution and queues, 7% pollution only, 6% inadequate supply, 6% distance, and only 1% did not experience any problems. The latter are those who draw water from either a protected spring or borehole in the area.

Eighty-five percent of the total households interviewed perceived their water to be dirty and polluted and therefore unhealthy for human consumption. Asked about their knowledge of diseases caused by unprotected water sources, 87% answered affirmatively and 13% did not know. Of those who were knowledgeable about these diseases, 30% knew about all of them, 23% knew about typhoid, 16% about cholera, 15% about bilharzia, and the rest knew about malaria and other diarrhoeal diseases.

It was also established that a significant proportion of households currently experience waterborne or water-related diseases. Sixty percent experienced typhoid, 20% chlolera, 16% bilharzia and 4% said they experienced a combination of all diseases. However, it must be noted that those who mentioned cholera could be confusing it with typhoid because the last cholera outbreak in South Africa occurred in the early eighties.

Respondents were further asked if their families experienced health problems due to water in the past, and 70% said that they had experienced typhoid, 16% bilharzia, 12% cholera and 2% all diseases. Of interest is the fact that the typhoid figure compares closely with the local hospital's figure of an average of 70 cases per month.

Of most deaths that occured in the past three years, 30% were aged between 0 and 5 years, and these died of diarrhoeal and typhoid fevers. Seemingly, the infants and aged are more at risk than any other age groups, as may be expected.

Clearly, past and current experiences with waterborne diseases have sensitized most people to the dangers of contaminated water. The

water sources perceived to be a health risk are rivers, unprotected springs, wells and the dam. Although the community is aware that boiling water kills germs, they regard this as a laborious task which consumes too much time and scarce energy. The only precautionary measure taken towards treatment of water is by a negligible number of households and involves sifting water through a clean cloth.

Facts and attitudes towards sanitation

It was encouraging to note that 68% of the households owned latrines, 12% shared with relatives or neighbours and only 20% used the bush. Although a significant proportion of respondents used latrines to dispose of excreta, they still regard their toilets as unsafe and unhealthy. Reasons for this perception are that their toilets are not properly constructed. They are smelly and are breeding places for flies. Furthermore, respondents who use neighbours' or relatives' latrines are unable to do so in the evenings, and therefore relieve themselves anywhere.

Despite the fact that most respondents would like to build VIP latrines at their homes, they felt that sanitation should only be considered after completion of the water supply system.

Economics and willingness to pay/contribute

Average household incomes were investigated in order to determine the degree of affordability of the technology envisaged. Unlike the situation in most rural communities in South Africa, where households depend heavily on remittances of migrant workers, in Bolobedu there was a different trend. It was established that most

families earn their living through the employment of at least one family member in big cities like Pretoria and Johannesburg or in neighbouring towns like Tzaneen. The availability of job opportunities and transport enabled people to commute to work daily, and this has eased the burden of having to stay far away from home over long periods. It was established that 83% of households earned income through gainful imployment, 8% from pension fund, 5% from unemployment insurance fund/savings, 2% from a combination of pension and employment, and 2% owned businesses.

It is important to note is that most respondents have access to a cash income of between R101 and R300 and there are fewer in categories above R300. A cash income of between R100 and R300 is the average in rural areas of South Africa. The 7% of those who earn R901 and more are mostly professional elites like teachers. Surprisingly enough, businessmen did not earn reasonable incomes.

Asked if they were willing to contribute money for the operation and maintenance of a water supply scheme, almost all respondents answered positively. No respondent answered negatively. However, 8% were uncertain. Respondents who were uncertain mentioned that they were unemployed, and therefore could not affirm or deny their ability to pay. Of the total respondents, 47% stipulated the amount they were willing to pay, as indicated in Table 5.4.

TABLE 5.4: AFFORDABLE MONTHLY CONTRIBUTIONS

AMOUNT RESPONDENTS WERE PREPARED TO PAY	PERCENTAGE
20c - R1,00	15
R 2,00	10
R 5,00	20
R 10,00	30
R 15,00	2
R 20,00	5
R 30,00	2
R 50,00	8
R 100,00	2
R 150,00	2
R 200,00	2

Prepardness to pay for improved water supply

It should be noted, however, that those who mentioned amounts of between R30 and R200 could have misunderstood the question to mean a once-off payment of capital cost.

Other respondents who were willing to contribute but could not stipulate the amount, mentioned that they would contribute any amount agreed upon by the community.

Ninety five percent of the total respondents indicated their willingness to work together by contributing labour, and particularly in-kind or voluntary labour. The respondents who were unwilling to offer voluntary labour attributed their reasons to unemployment. There is therefore a need also to consider approaching the South African Department of Manpower for an application for job creation funds. Although a once-off employment, the subsistance wage could temporarily help some families to avoid starvation and poverty. Lastly, respondents were asked how far they would prefer to walk to improved water sources, and 75% mentioned a distance up to 10 households; 18% said they would prefer to walk any convenient distance to water sources, and 7% said up to 30 households.

General discussions and comments

At the end of each interview, respondents were given a chance to comment or ask for clarification on any aspect of the study. Nineteen respondents had comments, and the following list summarizes some of the important ones:

- We have experienced skin and other water-related diseases due to polluted water.

- Water supply is an urgent and priority need.

- Water and proper sanitary facilities should be constructed at school.

- We need good pipes for crossings at streams/rivers. One respondent had problems with the water transportation to the Modjadji College of Education.

- Why do we have to pay for water on monthly basis? (An explanation was offered).

- We have been talking about water supply for a long time, now we need progress.

- Each family should have a latrine, it is a necessity.

- Typhoid has plagued our community. We have had enough.

- We experience high infant and child mortality rate due to water-related illness.

- Although I need safe water for drinking, I cannot work for free. I need payment because I am unemployed.

- I am a widow, and cannot afford a payment of more than R1,00 per month for operation and maintenance.

- I can only pay 50c per month, and free labour is unacceptable because my children will starve to death.

- If we are to be trained for VIP latrine-building, we should receive certificates at end of the course.

- Please speed up the process of water supply implementation.

- All other areas receive safe water without being questioned and without community involvement. Why is it different with us?

- The Youth League does not know about the project. I am therefore

not prepared to share information with you. Besides, the government should instal a water supply scheme for us as it did for other communities in the area.

- I am interested in becoming a caretaker for the envisaged scheme.

Despite the fact that some of the above-mentioned comments are negative, the researcher feels that the exercise was worthwhile. Through this practice, the respondents managed to ventilate their anger, frustrations and lack of trust towards authorities and development planners. These comments are important considerations for future planning purposes.

5.2.5 Community participation

Ever since the initial stage of the proposed project, key people were contacted to establish their views and interest in the project. These leaders included Kgosi M. Modjadji, a member of the LLA, the Chairman of Bolobedu Development Committee (BDC), the magistrate, the Senior Regional Health Inspector, the Senior Agriculture Extension Officer, and teachers and indunas.

All these leaders are eager to see developments taking place in Bolobedu. They therefore welcomed the water supply and sanitation project with great enthusiasm and a keen interest. The BDC further mentioned that, although water supply was ranked top in its list of priorities, the project could not be started due to pressure to build additional schools in the area. Also, financial constraints have limited their capacity to handle the problem. On the other hand, it will be difficult for the community to contribute money towards the capital costs of the water supply project as they are currently struggling to raise funds for

schools. However, the community is more than prepared to contribute labour towards the installation of the water scheme should funds be made available.

Through all these leaders, in particular the member of Lebowa Legistaltive Assembly and Chairman of the BDC, several community meetings were convened to discuss water upgrading projects. With great enthusiasm and interest, the community welcomed the idea and subsequently elected the BWCC. This committee comprises thirty members, two from each village. The establishment of this committee was based on the premise that Relela and a few neighbouring villages would serve as a pilot project with possible future expansion to other villages. A fund raising campaign was also launched.

In addition to fund raising, the BWCC investigated the incidence of typhoid at the local hospital in November 1990, and established that Relela had the highest rate of 106 cases versus 34 cases from other villages.

On the sanitation side, the senior regional health inspector undertook to request the Kgapane Hospital authorities to donate funds for the construction of two prototype Ventilated Improved Pit (VIP) latrines at the clinic in Relela. Training of prospective entrepreneurs would be offered by WATERTEK during the construction of these latrines.

5.2.5.1 Participation in fundraising

Once the outcome of the socio-technical feasibility study was available in May 1991, a meeting was held with the BWCC and the regional health inspector. The purpose of the meeting was to report the results of the study, in particular to explain the technical option with its

financial implications to the committee. The committee was also urged to discuss the results with the community at large. Having had no other option, the committee acceded to the proposed option.

Earlier on, an indication of the community's inability to contribute financially to the project was made. Because the capital costs of projects of this nature are normally beyond the communities' reasonable means, it became imperative for the latter to raise funds externally. Therefore, the researcher gave the committee guidelines on how to prepare a proposal for funding. The committee was also advised to make several copies of the feasibility study and send it to different sponsors for funding. In addition to this, a manual on " Community-based Management of Water Services" (see Appendix E) compiled by WATERTEK was handed to the committee. The researcher explained the content of the manual and mentioned that the committee still needed further training in management, particularly in bookkeeping, which would be done as the project progresses. Furthermore, an address list of more than hundred potential sponsors was given to the committee.

With the help of the local magistrate's office, approximately sixty copies of the feasibility study were copied and sent with proposals for funding to various sponsors.

5.2.5.2 Update on fundraising

Funding received from sponsors approached by WATERTEK and the community since the inception of the project are as follows:

TABLE 5.5: RESEARCH FUNDS/CSIR

ORGANIZATION	AMOUNT DONATED
. Anglo American Chairman's Fund	R30 000
. South African Breweries' Social Development Committee	R10 000
. Johannesburg Consolidated Investment Company	R10 000
TOTAL	**R50 000**

TABLE 5.6: PROJECT FUNDS/COMMUNITY

ORGANIZATION	AMOUNT DONATED
. South African Breweries' Community Projects	R50 000
. Blue Circle	R 5 000
. National Beverages	R 2 000
TOTAL	**R57 000**

The amount donated for research was used by WATERTEK to consult with the community on an on-going basis and to draw a suitable design of water for the area.

In early 1992, a joint proposal by the community and WATERTEK was submitted to the Independent Development Trust (IDT) who seemed interested in funding water projects in several villages of Bolobedu, including Relela. Despite promises, the IDT never approved funding for this project.

5.2.6 Community-based management/Capacity building

Although the proposed pilot project did not progress to the implementation stage, there were some positive trends developed during the process of dialogical intervention in the community. Using the manual on "Community-based Management of Water Supply Services" produced by WATERTEK (see Appendix E), the researcher trained the community in the management of water schemes.

Having been empowered by this process, the BWCC approached the LDA and demanded, as part of their fundraising campaign, that the water supply money for the 1990/91 financial year be deposited into their account so it could be used for a pilot project. Under pressure, the government immediately authorized the use of R170 000 in constructing a weir, a pumphouse, a 3.5 km pipeline and a 40 000 litres reservoir. No treatment plant was allowed for in this scheme. The government refused to deposit the money into the community's account. Without adequate consultation, the government used the source of water which WATERTEK and the community envisaged for a weir. Using their paternalistic approach, they built the scheme and asked the community to contribute in-kind labour for digging pipeline trenches. Initially, the community refused to work because it was the government's scheme, but after concerted efforts, the researcher negotiated with them and persuaded them to do so - otherwise the project would become defunct. The community responded positively. Together with the committee, WATERTEK identified alternative water sources for the pilot project.

In view of the 1992/93 drought, the BWCC approached the Lebowa Government again for assistance. In response, the government referred the committee to its engineering consultants stationed in Tzaneen. The consultants informed the committee that the Lebowa government has

allocated approximately R7 million for the water scheme as a drought relief measure. The proposed pilot project by WATERTEK had therefore to be suspended. A few months later, the initial construction phase started. However, instead of using the labour-based approach for construction, the consultants used the capital-based approach. That is, machinery was used for the entire construction, and this meant that no jobs were created, and all the capital was taken out of the community.

Although paternalistic and top-down methods were used, the community now has access to a safe and convenient water supply. However, operation and maintenance costs remain the government's responsibility. Also, the community still remained with no skills and was not empowered by this approach. Unless the government is prepared to transfer ownership and responsibility to the community, there is no hope for community-based management and control of the drought-relief scheme.

With funds raised to implement the project by using the community-based approach, the committee and WATERTEK were obliged to think of alternative developments in the area. The promotion of proper sanitary facilities is probably the most relevant option.

5.2.7 Appropriate technology

This is a summary of the only feasible option, which was assessed by measuring flows during the dry period of the year (August), and which was agreed upon by the elected water committee. The option involved a gravity flow system fed by springs and streams high up on the ridge.

The proposed supply system comprises a weir across a strong stream which feeds water into a slow sand filter. The filter product is supplied to two 40 kl storage reservoirs from where it is reticulated by gravity to the

dwellings below. Homes above this level are supplied from protected springs with 5 000 litre storage tanks and pipe reticulation. The estimated cost of this option is summarized in the following table:

TABLE 5.7: THE ESTIMATED PRELIMINARY COSTS FOR THIS DESIGN

ITEM	NO. REQUIRED	COST PER ITEM	TOTAL COST
weir	1	R 5 000	R 5 000
slow sand filter	3	R10 000	R30 000
storage reservoir 40 kl	2	R 9 000	R18 000
spring protection works	4	R 2 500	R10 000
storage reservoir 5 kl	4	R 1 500	R 6 000
pressure relief valves	4	R 750	R 3 000
Pipelines: mains (75 mm) secondaries (40 mm) branches (32 mm)	3 000 m 6 000 m 17 000 m	R 9 R 3 R 2	R27 000 R18 000 R34 000
standpipes	60	R 100	R 6 000
metres	60	R 60	R 3 600
labour	3 000 mandays	R 10	R30 000
transport			R15 000
contingencies			R19 000
TOTAL			**R225 000**

Note that even though the community has indicated that they are prepared to contribute voluntary labour, it has been found in many areas that the practice of paying a nominal amount of money for labour contribution greatly facilitates the progress of the project without detracting significantly from community ownership of the system.

5.2.8 Conclusion

Ever since its inception, this project experienced a series of problems which could be referred to as undialogical interventions. There have been many obstacles in the way of achieving the objectives of this project. The main obstacle was a lack of funds, and the lack of trust from the Lebowa government with regard to WATERTEK's capacity to implement projects. Clearly, the Lebowa government did not want to see WATERTEK's involvement in funds from the DBSA and the DDA. Despite savings that could have been made by using appropriate technology and a labour-intensive approach to implement the project using the R170 000, the Lebowa government decided to use the paternalistic approach to implement the scheme - which might easily have become a white elephant had it not been for the researcher's intervention.

An element of professional jealousy also became evident as, throughout the process of dialogical intervention, the government would always counter any idea with an opposing project. While we were bracing ourselves for the implementation of the scheme, and after the community had raised approximately R57 000, the government suddenly sent consulting engineers with a R7 000 000 budget to implement a water project. Obviously, with this approach, there is no way in which the community would not be attracted to a R7 000 000 versus a R50 000 project. Whether the government uses a community-based approach or not in implementing this multimillion rand project, it is not an issue to the

community in dire need of water. What is important is water.

Of importance though is that our efforts empowered the community to push for the government's involvement in the development of their water supply. Because our approach was dialogical, the intended beneficiary did not dump WATERTEK but invited the organisation to advise on the proper utilization of the R57 000 raised. Negotiations between WATERTEK and the community are underway to start a sanitation campaign using this money in the area.

All the same, it has been a learning curve for all the parties concerned, and it is hoped that, in the new South Africa, the democratic government's approach will be community-based.

5.3 CASE STUDY 2: KWAHLOPHE WATER SUPPLY

5.3.1 Introduction

The KwaHlophe rural ward (an unplanned settlement) in the Ndwedwe district of KwaZulu lies approximately 80 kilometres northeast of Pietermaritzburg. The ward is under the jurisdiction of inkosi/chief Hlophe. Although rivers and springs abound in this settlement, the major source of drinking water is from unprotected springs in summer and rivers during the dry season.

The dynamics and process of this case study are discussed in what follows:

5.3.2 The rationale for selecting KwaHlophe

The KwaHlophe ward was selected by Ndwedwe Development Council

(NDC) for a pilot project as it was perceived to be lagging behind other areas in the Ndwedwe district as far as the development of infrastructure in particular is concerned. Another reason stated by the NDC was that this community was the poorest of all communities in the district.

5.3.3 Negotiations

5.3.3.1 Ndwedwe Development Council

All development activities in the Ndwedwe district are coordinated by a committee known as the Ndwedwe Development Council (NDC). This committee was constituted by officials from the KwaZulu Departments of Agriculture (KDA) and Health (KDH) in Ndwedwe. Towards the end of 1988, the NDC approached WATERTEK for financial assistance to upgrade the water supply and the sanitation situation of the KwaHlophe ward. The development of community gardens and other such developmental projects were envisaged as subsequent secondary benfits to be derived from such a project.

Being a research and development organization, and not a funder, WATERTEK responded by suggesting joint venture with the NDC in raising the consciousness of the community to initiate a pilot project. It was agreed that together WATERTEK and the NDC should approach potential funders such as Umgeni Water (UW) for financial assistance in undertaking the project.

5.3.3.2 Umgeni Water

"Total water management" is a concept fully embraced by UW as an ultimate goal to extend its distribution network to enable not only urban consumers but all people within its area of supply so that they can

benefit from the provision of adequate potable water of an acceptable quality at an acceptable cost. A start has been made in recent years to achieving this goal through the provision of water supplies to a number of rural communities with standpipes at suitable collection points. Hence, their involvement in the KwaHlophe pilot scheme would be beneficial for them in terms of learning the participatory approach to development. In particular, UW was to be the sole sponsor of the project.

5.3.3.3 Negotiations with the community

Prior to the implementation of this project, the social wing of this group made contacts with the tribal authority and other community leaders to negotiate as well as to establish an interest in a project of this nature. Both parties were unanimously in favour of the project. The team was therefore given the green light to go ahead with a technical feasibility/ need assessment study. In the meanwhile the chief undertook to inform all his councillors about the proposed project so that they could cooperate with the research team when undertaking the survey.

The high failure rate of national water supply schemes in the past has highlighted the fact that satisfactory management and an adequate monitoring programme could ensure achievement of self-sustaining community projects. Therefore, in addition to a need assessment study, the team convened a community meeting at which a proposed project was formally introduced and discussed. Although we had not analysed the socio-technical data at the time of this meeting, indications were that the community was quite optimistic and enthusiastic about the project. As a result, a representative Water Committee was elected. The research team promised to report the findings of the feasibility study to another formal meeting.

In view of the proximity of the NDC to the project area, it was agreed that members of this Council act as ex-officio members of the KwaHlophe Water Development Committee. However, the idea was not for the Council to take over the duties of the Water Committee, but to facilitate the day to day administration of the project.

5.3.4 Need assessment

The qualitative and quantitative data (see Appendices B and C) was collected and results of this study are reported below.

Biographical data

The sample consisted of 92% females, 75% of whom were mothers/wives, and 17% daughters. The males constituted only 8% of the sample, 5% of these were fathers/husbands, and 3% were sons. A large number (40%) of the respondents were elderly people (45 years or more old). Many of these people had no educational qualifications. At the time of the study, there were no schools at KwaHlophe itself, but the children were able to attend school in neighbouring tribal wards. As may be expected, life is still very traditional, with no major commercial or industrial activities. The traditional tribal structures are still very much in place. However, due in part to a number of the men (± 90%) working away during the week, the women appear to be prepared to take on community responsibilities when the need arises. It was established that 42% of the total respondents had never been to school, 17% had up to Standard 2 education, 16% up to Standard 8, 13% up to Standard 5, 11% up to Standard 10, and only 1% had a matriculation and tertiary education.

Water sources and water quantity

The majority of the community, that is, 95%, collect their water from two main sources, namely the unprotected springs and rivers. The high percentage who collect their water from these (bacteriologically contaminated sources) was a matter for concern because polluted water causes disease.

The KwaZulu borehole was the only improved water scheme in the community and had been in operation for only a few months. The community could not therefore compare its yield for both summer and winter. Although there are complaints about the lack of an apron around the handpump (a factor causing poor drainage), those who have had access to the borehole were impressed by the quality of its water.

The average family size is 7 persons. The daily household and per capita water usage is as follows:

TABLE 5.8: THE AVERAGE HOUSEHOLD AND DAILY PER CAPITA USAGE

SEASON	MEAN DEMAND	
	Household	**Per capita**
Summer	93 litres	13 litres
Winter	84 litres	12 litres

Of the total respondents, 94% mentioned that they get enough water from the sources mentioned above in summer, and 67% mentioned the same for winter. This is an indication that some sources yield poorer water in winter. The per capita water usage of 13 litres per day is far below the

World Health Organizatoin's 50 litre per capita per day recommendation.

It was further established that 97% of the water drawers are females, that is, mothers and daughters, and 3% are males. The distance to the water sources ranged between 250 metres to more than one kilometre, and the time taken to fetch water was up to two hours.

Notwithstanding the fact that both the respondent and interviewer estimated the distance and time to fetch water, the answers should be treated as subjective because they depended on the individual respondent's circumstances. For example, an aged respondent may regard even 50 metres as too far and too long to walk. The interviewer may also be too subjective in estimating the distance. More often, rural people do not count time and distance conventionally. Even so, only about one-third of the community have reasonable access to their water supply according to the standards suggested by the United Nations Water Decade (<250 metres). Table 5.9 summarizes the perceptions of time and effort employed in obtaining water.

TABLE 5.9: PERCEPTIONS OF TIME AND EFFORTS EMPLOYED IN OBTAINING WATER

PERCEPTION OF TIME	PERCENTAGE OF RESPONDENTS
Normal	50
Too much	30
Little	20

Asked if there are always queues at the water source, most respondents, (72%) said *no*; 17% said *yes* and 11% said *sometimes*.

Other problems associated with the collection of water included having to walk on bad foot paths, and clashes at the water sources due to occasional long queues. It appears that the collection of water in the area is difficult due to the steep climb from the water source to the houses in many cases. This is particularly severe for the old and the sickly. Even so, many accept this as their normal lot.

Two sources were used for all purposes, including animal drinking and gardening. The borehole and rainwater are not used for the latter two purposes. It also became apparent that 22% and 15% of spring water is used for animals, and 15% is used for plants, while 35% of river water is used for animals and 17% for plants. The KwaZulu Department of Agriculture was in the process of involving the community in establishing food gardens next to springs and rivers.

Water quality and sickness

Generally, rain water and borehole water are preferred, even though so few have access to them. Spring water is preferred to river water, though not to a great degree.

The percentage of respondents who mentioned that their water is polluted mainly comprises people who draw water from springs and rivers. Generally, people realise that their water can be contaminated, especially by animals and children who defacate near the water sources. The concept of protecting the springs is therefore readily accepted and understood.

From Table 5.10, it can be deduced that the people realise what steps can be taken to reduce the sources of contamination. It is also encouraging to see the support for community gardens - indicating both

the desire to develop and provide for themselves, as well as to work with others for the common good.

TABLE 5.10: THE IMPORTANCE OF FACILITIES NEAR THE MAIN WATER SOURCE

FACILITY	IMPORTANT	NOT IMPORTANT	N/A
Water trough for animals	94%	3%	3%
Washing slabs	82%	18%	-
Vegetable gardens	64%	29%	7%

It should be noted that the percentage in the "not applicable" (N/A) category represents respondents who neither own animals nor vegetable gardens. Most respondents would like to have vegetable gardens closer to the water source so they can use waste water for their gardens. Asked if the family currently experienced health problems related to the water they drink, 42% mentioned that they experienced cholera in the early eighties, 32% experienced diarrhoea, 21% dysentry, 3% typhoid, and 2% malaria.

It was established that most respondents, that is 66%, know that diseases can be caused by polluted water, while 32% do not know and 2% are not sure. Water sources perceived to be a health risk are both springs and rivers. It must be noted, however, that the last cholera outbreak was in the early eighties. Therefore, respondents could have confused cholera with typhoid and other diarrhoeal diseases. As for waterborne diseases experienced by the families in the past five years, it was established that 76% had experienced cholera, 16% diarrhoea, 4% dysentry, and 3% malaria and bilharzia. The cholera figure sounds realistic for the early

eighties because many people either suffered or died from it. Clearly past experiences of cholera have sensitized some of the people to the dangers of contaminated water.

Asked whom they consult in cases of water related diseases, 98% of the respondents mentioned medical doctors or clinics and only 2% mentioned faith and traditional healers. We can see here that people's way of life is changing from using mainly traditional healers to conventional medicines. This is due in part to the fact that waterborne diseases in the eighties could be effectively healed by the latter.

Economics and preparedness to pay/contribute

Household incomes were investigated with a view to determining the degree of affordability of technology. It was established that most respondents earn their living through remittances of migrant labour of at least one of their family members. Furthermore, 59% of the sampled households are supported by fathers and sons, 33% by mothers and daughters, and 8% by other relatives.

Of importance to note in this figure is that most respondents, that is 64%, have access to a monthly cash income of between R100 to R300 and fewer with categories above R300. The conclusion can, therefore, be reached that most families are reliant on the cash incomes of migrant workers for their survival.

Asked if they were willing to contribute money to improve their water supply, 79% answered positively, 17% negatively and 4% were uncertain. Most of the respondents who were uncertain mentioned that the breadwinners have a final say in all financial matters, and that they could not decide on their own. The reasons for the unwillingness to contribute

(17%) are threefold, with the lack of money constituting the largest number, that is 58%; those who said they might contribute were 34%; and those who are not interested were 8%.

It was further established that the younger the generation and the more educated, the more prepared they were to contribute, whereas the older generation feels financially insecure. Tables 5.11 and 5.12 summarize these factors.

TABLE 5.11: LEVEL OF EDUCATION VERSUS WILLINGNESS TO CONTRIBUTE

EDUCATIONAL LEVEL	WILLING	UN-WILLING
Std 9 up to Std 10	100%	0%
Std 6 up to Std 8	96%	4%
Std 4 up to Std 5	94%	6%
Std 1 up to Std 3	80%	20%
Never attended school	70%	30%

TABLE 5.12: AGE VERSUS WILLINGNESS TO CONTRIBUTE

AGE	WILLING	UN-WILLING
15 - 24	94%	6%
25 - 34	87%	13%
35 - 44	83%	17%
45 and above	72%	28%

It also became apparent that 66%, which comprises most respondents,

are not sure of the amount they could afford to contribute per month. Twenty eight percent could contribute up to R10, 4% up to R20, 1% up to R30, and 1% more than R30. Although most respondents were willing to contribute, they found it difficult to decide about the amount, partly because no specific amount was set and because the breadwinners and/or the inkosi are the deciding factors. However, the majority mentioned that they would contribute the amount decided upon by the inkosi in collaboration with the community. As far as the preferred form of payment (once the system is in operation) is concerned, 70% of the respondents preferred to pay a fixed amount per month for water, 2% prefered the coupon/kiosk system, and 28% gave no response. A coupon or kiosk is a system of payment whereby people either purchase a number of coupons that entitles them to a number of 25 litres containers of water from a local shop or else they buy water directly from the water vendor. The only difference is prepayment for the former versus cash payment for the latter.

Asked about their willingness to work with other people in the community to improve water supply, 87% of the respondents were willing, 12% were uncertain and 1% were not willing. Of the percentage who are willing, 91% would work voluntarily, 7% would not and 2% were uncertain. The percentage "not willing" mainly comprised the aged, whereas the percentage "not certain" would follow the majority's response to this aspect.

It was further established that 40% of the total respondents aspire to spring protection as an improvement to their water supply, 35% to piped water, 20% to boreholes, 3% were uncertain, and 2% had no opinion.

It should be noted that the need assessment study was undertaken simultaneously with the technical feasibility study. At this stage it was still

unknown which options would be feasible.

Most residents were willing to contribute both finances and labour to improve their water supplies. This is vital because it instils a sense of ownership of the schemes. It is equally important for the residents or their elected committee to make the decisions about the type of improvements to be implemented and how they will be financed and implemented. It is suggested though that a spring protection, storage and distribution scheme could only be implemented once a target amount has been collected by the beneficiaries of the scheme. A target amount may, for example, be R500 for a scheme benefiting 25 households, of which R400 is earmarked for materials (cement, taps, fencing wire), and R100 is earmarked to pay the trained supervisor.

Facts and attitudes towards sanitation and refuse disposal

- ***The systems used to dispose of excreta***

  A large percentage of respondents, that is 55%, use the bush to dispose of excreta, 42% have ordinary pit latrines and 3% either use a relative's or neighbours' latrine.

- ***Perceptions of the systems***

  Of those interviewed, 92% mentioned that the latrine is the best method of excreta disposal, 6% do not know, and 2% mentioned that the bush is the best system. From the large percentage of respondents who mentioned that latrines are the best, deductions could be made that most people are aware of the importance of proper sanitation for good health.

- ***Willingness to have a latrine***

Of the respondents, 60% who do not have toilets would like to have one, 38% are not certain if the breadwinners would agree, and 2% would not like to have latrines at all. Cultural reasons were given for the lack of interest in building toilets. Apparently, it is taboo for a father-in-law's excreta to mix with that of the daughter-in-law's.

- ***The kind of latrine preferred***

Of the total respondents, 35% would like to have an ordinary latrine without a ventilation pipe because it is cost-effective, 26% would like to have a VIP (Ventilated Improved Pit) latrine, 1% a flush toilet, and from 38% no response was elicited.

- ***Willingness to spend money for latrines and amount affordable***

Of the respondents who do not have toilets, 44% did not respond, 39% are willing, and 17% are not willing. It was also established that 82% are not sure of the amount they could afford to spend on building latrines, 9% would spend up to R100, 8% up to R150 and 1% R200 or more.

- ***Problems associated with toilets***

Of the respondents who have toilets, 60% mentioned that they do not have problems with their toilets whereas the remaining percentage either mentioned smell, flies, bad structure and quick filling as problems.

- ***Detergents used for cleaning toilets***

It was established that 64% of the respondents who have toilets just sweep and use ash for cleaning the toilet, 22% use Jeyes fluid, 10% use soap and water, and 4% do not clean.

- ***Refuse disposal practices***

There is not at present a significant amount of refuse produced by the residents. Sadly though only about one-third of the people dispose of their refuse (waste food, paper, etc.) in pits on site or by burning (Table 5.13). It is hoped that, as a result of further education, this practise may become more widespread.

TABLE 5.13: REFUSE DISPOSAL

SYSTEM	% OF RESPONDENTS
Anywhere	62
On-site	29
Burning	8
No response	1

Communication media

TABLE 5.14: ACCESS TO COMMUNICATION MEDIA

MEDIA	% OF RESPONDENTS
Radio	55
Tribal authority	17
Pamphlets	15
Schools/Clinics	7
Health/Agricultural officers	4
Television	1
Journals/Magazines	1

TABLE 5.15: PREFERRED COMMUNICATION MEDIA

MEDIA	% OF RESPONDENTS
Radio	61
Tribal authority	14
Pamphlets	11
Schools/Clinics	6
Health/Agricultural officers	3
Television	3
Journals/Magazines	2

In addition, the respondents were shown a simple illustrated pamphlet on how to build a VIP latrine to assess their understanding. The rationale for this question was to establish what communication media could be used to disseminate information to people without education.

It should be noted that a large percentage of the respondents who could not understand the pamphlet were mainly females who cannot read. However, most of them mentioned that, with the help of their school-going children, they may be able to understand the pamphlet and implement the project as illustrated. Those who mentioned that they would understand the pamphlet recommended that such pamphlets should be written in the local language and have big drawings. Mention was also made that even though some parents are unable to read, their school-going children would help them.

Livestock

The survey established that 64% of the sampled households keep livestock, mostly cattle which constitute 47% of the total livestock available; 40% are goats and 13% are sheep. No donkeys, mules and pigs were kept in this community. Most people in KwaHlophe belong to the Shembe religion which forbids pork consumption and so not even a single pig was seen in the community.

The livestock graze anywhere and therefore drink from the same springs and river which are utilized by people. A fair proportion of respondents, that is 63% think that it is not hygienic to drink from the same source utilized by livestock; 2% did not see anything wrong with such a practice; and 35% had no response. The majority of respondents from whom no response was elicited mentioned that they never gave this subject a thought.

Impressions of key people/leaders regarding the development of KwaHlophe

In a separate interview schedule (see Appendix C), the key people/

leaders in KwaHlophe were also interviewed to establish their views about the general and development needs of the community. These leaders included the acting inkosi, indunas, social workers, nurses, health inspectors, agricultural officers, magistrate and teachers. The general impressions of the leaders are that though poor, KwaHlophe is a peace-loving community, and it is cooperative and development-oriented. It was further established that this community is always eager to improve its quality of life but that financial constraints limit their efforts. Through the influential leadership of persons like the acting Inkosi, Mr Gobodisa Hlophe, Messrs. Henry Hlophe, Elphas Hlophe and the councillors, the community responds fairly well to development initiatives.

According to leaders, the unprotected water sources and limited sanitary facilities led to the outbreak of cholera in 1983 and typhoid in 1986. Although minor incidences of waterborne diseases still prevail, the rate is controllable. It was also mentioned that improved water supply is the top priority, followed by sanitation, food production, schools, creches and supplementary roads. The leaders further maintain that the government and community should do things on a 50:50 basis if water supply and sanitation are to be improved. If the community shows interest and commitment by contributing financially or otherwise, the government should be obligated to respond in kind.

Concerning the availability of enterprising persons in the community to oversee and direct the implementation of water supply projects, the following people were recommended: Messrs Elphas Hlophe, Emanuel Cebekhulu, Mfaniso Cebekhulu and Sunton Hlophe. According to the leaders, the above-named people are actively involved in community affairs and should therefore be given the necessary guidance and training to lead the community in the right direction.

Summary and Conclusion: Need assessment

The study investigated the people's attitudes towards their water supply and sanitation with a view to establishing their willingness to participate in improving these essential aspects. The study revealed that most people do not have access to a safe water supply and are aware of the health risks associated with the water they drink. A fair proportion of people have experienced health problems due to water in the past, and minor incidences still prevail in the community. The community would therefore like to have improved water supplies in order to prevent waterborne diseases.

It was further established that the majority of people are willing to contribute financially and voluntary labour/in-kind for an improved water supply. It was also interesting to note that, although the people never paid for water in the past, they do realize that the convenience of their water supply should be paid for. Another important aspect which became evident from the results of this study was the fact that the younger generation and the more educated people are more prepared to contribute in whatever manner they can towards an improved water supply. However, this is understandable because, in most cases, the older generation is financially insecure and more frail.

It also became apparent that most people are aware of the fact that the lack of proper sanitary facilities is a health hazard. The taboo which traditionally prohibited the mixing of excreta for certain members of the family appears to have waned. Therefore most people have shown a significant amount of interest in building pit latrines. Because of financial limitations, a reasonable proportion of people prefer to build ordinary pit latrines to Ventilated Improved Pit (VIP) latrines. It is, however, hoped that, with proper government incentives, people may be motivated to build VIP

latrines. The subsidization of water supply and sanitation projects is imperative if development is to take place.

Deductions which can be made from this study are that the KwaHlophe people are enthusiastic and willing to upgrade their water supply and sanitation. Thus, with joint efforts there are possibilities for achieving self-sustaining projects which the community can be proud of.

5.3.5 Community participation

As mentioned under negotiations, the community was involved since the inception of the project and throughout the implementation phase of the project through its elected Water Committee. Therefore, as soon as results of the technical feasibility and need assessment studies were completed, the results were first presented to Umgeni Water and the community.

5.3.5.1 Umgeni Water

Since Umgeni Water was the main funder for the project, the next step was to discuss these findings with them before presenting them to the community. What transpired in those discussions was that Option III carried with it an inherent risk element which could prove costly. This led to this option being dropped altogether. Umgeni Water pledged to contribute the vast majority of the costs for the project on condition that the community donated a token amount to help nurture the feeling of ownership and commitment to the scheme. This token amount, for instance, turned out to be about R7 000 for Option II, or R30 per family, a once-off payment.

5.3.5.2 Community meeting

At a community meeting held to present and discuss the results of the socio-technical need assessment/feasibility study, the community was briefed. Most of them felt that they did not have reasonable access to a safe and adequate supply of water. They were therefore willing to work together towards improving the situation.

Upon being presented with the results of the technical study with the resultant two options (and an in-depth discussion of their fundamental differences and cost implications), the community almost unanimously opted for the more expensive alternative, that is, spring protection in regions A - C, and a weir and pumping in region D.

The idea was that construction would begin as soon as the R7 000 had been collected after about two to three months. The Water Committee would, of course, be responsible for the collection and administration of the money.

Collections for the project started on a very, high note with people actually queuing to start donating during the meeting. As time went on, so the collections gradually waned. The community never contributed the total fee required prior to implementation of the project.

As for sanitation, the community decided that such a project should be preceded by a water project. The reason given was that it would not be possible for most families to contribute to both improvements at once.

5.3.5.3 Participation in construction

The community contribution of R7 000 mentioned earlier, almost ground to a halt. Three months later, some families had either not contributed the full amount or contributed nothing at all. It was established from the Water Committee that rumours had it that the latter was trying to turn the tribal ward into an urban township, and that the water scheme was not feasible. Together with the Water Committee, the researcher convened a meeting to establish why the community was failing to contribute money as promised. The community mentioned unemployment as a contributory factor. However, they promised and urged one another to contribute because they did not want the project to stall. It was also agreed in that meeting that the project construction be started in August 1989.

Once work had begun, it became evident that only women were present to provide most of the labour needed as the men were mostly away at work in the towns during the week.

Also, some two gentlemen had been nominated to undergo training for the maintenance of the protected spring system. But it turned out that the first one had been offered a job in town and the second one had a communication breakdown with the Water Committee. Hence the first lesson learnt in the implementation of the scheme is that *women* community members should be elected to tend the system since they are the primary users of the water and have, as such, more interest in the success of the project. Another lesson learnt was that, after its election, the Water Committee members were never trained for their roles in the project.

Once these minor problems had been normalized (through acceptance of the women as the main providers of labour and training of Water Committee by WATERTEK), work went on well until the springs had been protected, a couple of reservoirs had been built, and it was then the time to dig trenches for reticulation. The team (WATERTEK, Water Committee, UW and NDC) felt that this work was not suitable for the women and a suitable solution had to be found. Accordingly, the community met and were appraised with developments as they stood to date. They were asked to help solve the labour problem. What seemed at the time to be an ingenious solution to the problem came from the male community members themselves. They suggested that an arrangement be made for them to be allocated some work and that the tools be left at a place they could access so that they would be able to do this work over the weekends!

The community has helped with voluntary labour in all regions. Despite difficulties in the organization of labour, the committee managed to get people in their respective regions to participate. The Water Committee has been responsible largely for the collection of money, managing the community meetings and generally motivating the community, but it should also be mentioned that much of the credit for the success of the project thus far, goes to the office of the inspectorate of health who have selflessly devoted a significant amount of their time to coordinating and mobilizing the community. Unfortunately, an active member of the Department of Agriculture was transferred, and his replacement was not interested in the project.

5.3.6 Community-based management/Capacity building

Management of this scheme has been a learning curve for all involved, in particular the Water Committee. Initially, due to the inexperience of the team, the Water Committee was not trained in management. This was done retrospectively. Also, when the committee was established, the problem of elected member availability was neglected. As a result, two members of the committee found jobs elsewhere in Durban. However, their vacancies were filled.

Although, with regard to gender, the committee was representative since its inception, it was less so with regard to enthusiasm and literacy. Being the sole professional member of the committee, the chairman was faced with the problem of handling all administration work. The co-option of four newly qualified teachers and one nurse onto the committee has helped to alleviate the problem.

Quite recently, there has been a problem with the Water Minder's wages. This stemmed from the fact that the system was not complete. Therefore, not all people were willing to contribute money for operation and maintenance because they had no access to safe drinking water. Apparently, money contributed by the few could not cover the Water Minder's wages but could only cover the price of diesel. However, as soon as most people gained access to improved water, contributions improved. Currently, the Water Minder receives R70 per month. This amount may increase as soon as all the people have access to improved water.

Another problem that contributes to the management problem is the technical inefficiency of the system at region D as mentioned earlier. Some community members would not pay for their water because the system does not perform well. Indeed, nobody likes to pay for something

that does not work. WATERTEK and UW therefore solved the technical problem.

In view of the apparent difficulty in collecting the operation and maintenance fee, the KwaHlophe Water Committee considered the following measures to solve the problem:

- They propose to introduce a card system for purchasing water from the committee. Details of the functioning of the system is being worked out, and will be available in the near future.

- As soon as the technical problem is resolved, and the scheme is officially handed to the community, the Water Committee will approach different funders to assist with expansion or improvement of the scheme. This expansion involves yard connections with a view to cutting the supply of water if the family fails to pay its dues.

5.3.7 Appropriate technology

Water Supply Alternatives for the KwaHlophe ward in Ndwedwe

Four distinct watersheds could be identified in the area. For reference purposes it was decided that the area be classified into four regions, viz. A, B, C and D.

Viable springs were located and evaluated throughout the four regions and it was found that it was indeed possible to protect these springs and then suitably reticulate them towards a proximity of at most about 250 m, as per the World Health Organization (WHO) guideline. This approach was to be presented as a first option in order to meet the water supply needs of the community. However, its disadvantage was that, in region D, all the viable

springs were in the low-lying valley whereas the homes were all built on the ridges in between valleys. This meant that, even with the protected water, the residents would still need to expend significant amounts in effort to climb up the steep hills with the heavy loads of water each day.

Two other alternative solutions were then considered. In these proposed scenarios, regions A to C would remain the same. In region D, water was to be pumped into two reservoirs located at the highest elevations in the region. The water was then to be gravity-fed to standpipes close to the homes along the ridges. The only distinction between these two newer alternatives for region D was the source of the water. The water could either be pumped from underground or drawn from a weir along a powerful stream. It could then be treated and then pumped into the reservoirs. While these are much more costly alternatives, the benefit to the community would be considerable.

The material requirements and cost implications of each option are summarized below.

- **Option I**

  In this option, selected springs in all four regions are protected. The water is collected in 5 000 ℓ ferrocement tanks and then gravity-fed by means of high-density poly-ethylene pipes to numerous standpipes. The standpipes are placed in such a manner that each dwelling will be, at most, 250 m from a standpipe. The standpipe would be cast in concrete with a suitable concrete surround. The total capital costs for this option were **R75 000**. This included the possible cost needed for the provision of a borehole and a reservoir for the school.

- **Option II**

In this option the springs in regions A, B and C would be protected in the same manner as described in Option 1. Water would be dammed up at a central point in region D, passed through a sand filter and then pumped to two separate reservoirs. The water would then be gravity-fed to all sections of area D.

Capital costs for options II were **R220 000**.

- **Option III**

The same supply network of piping and standpipes would be utilized as in Option II. In this case, however, a borehole would be sunk at each of the reservoirs mentioned in Option II. This would cut out the need to pump the water over a long distance to the reservoir. A further advantage over Option II is that virtually no treatment of the water would be necessary.

The capital costs in this case were **R190 000.**

Project completion

Work in all four regions is complete. The weir, the superstructure for slow sand filter (SSF), the pumphouse, the reservoir storing water from the SSF, two 40 000 litres reservoirs, several 5 000 litres ferrocement tanks, spring protection and pipelines in all regions have been completed.

However, there were technical problems on four pipe networks for region D. Apparently, due to lack of sufficient pressure, water was unable to reach certain sections of the community. The lack of proper daily

supervision of construction by an engineer from Umgeni, was recognised as the source of the technical problem. However, because both the WATERTEK and UW were committed to the project, this problem was eventually solved between 1992 and 1993.

Although the spring protection work is complete in region A, the community does not enjoy an easy access to water. Pipelines were vandalized in 1990 and repaired soon after the family factions/in-fighting were resolved. In 1991, the pipelines were again vandalized, and as a result, the community does not have a safe and convenient water supply.

The committee has decided to suspend repairs to the latter part of the scheme, hoping that community members concerned will resolve their problems and so restore their water.

5.3.8 Conclusion

Despite all the problems experienced in the management, this project is progressing well, and the committee is committed to seeing to it that it does not collapse. Both WATERTEK and Umgeni Water are still committed to giving the back-up support necessary to keep the project going. Furthermore, through this project the community of KwaHlophe has been empowered to look at new developments like the primary school which has just been completed. An approach has also been made to Electricity Supply Commission (ESCOM) for electrification of the pumphouse in particular, and the village as a whole. Unlike diesel, electricity would be more cost effective and convenient for the community.

5.4 CASE STUDY 3: KWANYUSWA WATER SUPPLY

5.4.1 Background

A committee representing the KwaNyuswa ward (an unplanned rural settlement), Ndwedwe District, KwaZulu, approached WATERTEK in November 1990 for assistance with the planning of the upgrading of their water supply. The neighbouring KwaHlophe ward was in the process of upgrading their water supply, and this had inspired the KwaNyuswa community to tackle the improvement of their supplies.

5.4.2 Negotiations

5.4.2.1 Negotiations/Dialogical encounter with the community

Having been inspired by the neighbouring KwaHlophe water supply scheme in process mentioned earlier, the KwaNyuswa community elected a water committee in October 1990. The chairman of this committee met with the researcher and other members of the WATERTEK at a community meeting in KwaHlophe. The chairman attended this meeting with view to learning from the KwaHlophe community as well as for the purpose of establishing lines of communication with WATERTEK. A special meeting between the committee and WATERTEK was arranged for the next day.

In that meeting the committee was introduced and verbally requested WATERTEK for assistance in the upgrading of their water supply. The committee had already approached each of the estimated 220 families in the area to contribute an initial R40 and before long the R5 000 mark had been reached.

With her colleague, the researcher commended the community on their rapid achievement and their courage in initiating their own project. The researcher explained the potential funding for the project and the fact that WATERTEK would appreciate a formal request for assistance. The committee was also advised to draw up a constitution and attach it to their proposal. The senior health inspector and a teacher who is the secretary of the committee volunteered to seek assistance in the drawing of a constitution from the local magistrate's office.

A formal proposal for assistance with the planning of the upgrading of the KwaNyuswa water supply was received by WATERTEK in November 1990. In response to this proposal, a three member technical crew of WATERTEK visited the area to carry out a technical feasibility study early in January 1991.

In March 1991, the researcher held a meeting with the Water Committee to discuss the feasibility study report. Two technical options with their financial implications were discussed so that the committee could make an informed decision. As usual, the committee chose the most expensive option because of its advantages. Furthermore, the researcher assisted the committee in drawing up a proposal for funding. In fact, the researcher merely gave the committee some guidelines for writing proposals. The initial draft of the proposal was written and sent to the researcher for comments prior to sending it with copies of the feasibility study report to potential funders (see proposal on Appendix F).

5.4.2.2 Negotiations with organizations involved

All organizations involved in the KwaHlophe project were also involved in KwaNyuswa. Unlike the case in KwaHlophe, Umgeni Water did not

offer financial support, but only technical assistance for implementation of the project. In view of the problems experienced in KwaHlophe and the fact that the project was still under construction, Umgeni Water could not justify financial investment in a new project of this nature. It was therefore recommended that other sponsors be approached for assistance. Additional organizations involved in the project were:

Sukumani Development Company

Sukumani is an organization which is involved in promoting sugar cane growing among the people in Ndwedwe. Besides sugar cane, the organization is also involved in community projects that include:

- water supply - spring protection
- education - building schools
- food production - vegetable gardens
- electricity

This organization has offered to undertake the spring protection work. In other words, Sukumani offered its technicians to help develop the springs in this project.

World Vision

World Vision is a non-racial and non-denominational Christian organization involved in community development work, in particular child welfare. Most of the organization's work is focused on pre-school children. World Vision fund creches, schools and provide ferrocement water tanks at these institutions. This organization also has a food aid programme.

Furthermore, World Vision is also involved in coordinating self-help projects such as food gardening, sewing, knitting, etc. It also, offers training to local entrepreneurs for building ferrocement rainwater tanks. In some cases, the organization offer financial assistance for community projects.

In this project World Vision was subcontracted by WATERTEK to render project management and supervision services, in particular, of the ferrocement tank construction.

Various sponsors

Despite the fact that the Committee managed to collect R40 per family to cover capital costs of the project, the total cost of the project far exceeded the amount collected. There was therefore a need for the Committee to raise extra funds for capital costs of the project.

The researcher advised the Committee to make several copies of the technical feasibility report, to attach their proposal to each, and to send it to different funding agencies. Approximately 70 proposals were posted. Most responses were negative. However, some organizations like BP, Gencor, SAB 's, Social Development Committee, South African Paper and Pulp Industries (SAPPI), Joint Services Board (JSB) indicated an interest in the project. In fact, SAB and SAPPI contributed R5 000 and R2 000 respectively. The SAB (Community Projects) indicated an interest in funding the project in the 1992/93 financial year, whereas BP made R13 000 available specifically for spring protection work. This money was handed over to the Committee at a community meeting held on 17 August 1991.

5.4.3 Need assessment

In the context of this thesis, as discussed earlier, the need assessment studies were undertaken to ensure the communities' interest in and acceptability of water supply and sanitation initiatives by outsiders. The researcher therefore assumed a lack of knowledge regarding the community 's developmental priorities. It was therefore imperative to engage the communities in a dialogue with a view to conscientizing them about their water supply and sanitation situation.

Contrary to the two case studies discussed above, the KwaNyuswa community approached WATERTEK after having organized themselves and identified a **specific** need to improve their water supply. Any effort to take them through similar process as in KwaHlophe and Relela would have defeated the purpose. In that case then, it would be an effort to address the set needs of the researcher rather than those of the community. Ideally, all projects should be initiated by the communities (the bottom-up approach) and not by outsiders. However, where communities lack this initiative, as in the first two case studies, it is important to adopt a top-down and bottom-up approach which could lead to a synergy. Also, it was important to start from where the community was and take the process further.

Rather than imposing ideas, the researcher conscientized the communities (KwaHlophe and Relela) through dialogue about the need for improved water supply and sanitary facilities.

5.4.4 Community participation

Being the initiators, the KwaNyuswa community participated in this project from the outset through to the end.

5.4.4.1 Participation in health education and fund-raising

In August 1991, a community orientation day was held at which the project was discussed in detail. The opportunity was also used to educate the people about health and sanitation. At this meeting, a representative of the Gencor Development Trust was able to announce that the Trust has allocated R65 000 to the project. The BP oil company also took the opportunity to hand over a cheque of R13 000 to the community. The community presented a drama and musical items on water-related diseases. It was quite interesting and heartening to note how creative and aware the community was regarding water pollution and its impact on health. A participatory bottom-up and top-down education proved to be appropriate on this orientation day.

By February 1992, the KwaNyuswa Water Committee had been able to raise the total amount of **R248 000** from several sponsors including:

Ebhodwe Joint Services Board	R159 000
Gencor Development Trust	R 65 000
BP	R 13 000
S A Breweries (SAB) Group	R 5 000
KwaNyuswa Community	R 4 000
S A Paper and Pulp Industries (SAPPI)	R 2 000
TOTAL	**R248 000**

The SAB 's Community Projects Division then verbally approved an amount of not less than R80 000 in the new financial year - 1992/93.

Another community day was held in August 1992, nearly a year after the previous meeting. There were items of entertainment, progress

reports on the project, and opportunities for questions. The SAB handed over a cheque of R80 000 at this meeting. Perhaps the most important aspect of the day was the opportunity for water committees from several surrounding communities to visit the project and gain a vision of what they too can achieve.

5.4.4.2 Participation in construction

The construction phase of this project started in earnest in mid-December 1991. Despite the fact that the project budget of R243 000 (October 1991 estimate) had not yet been secured, with the initial funding from Gencor, Sappi, BP and the SAB Group, it was felt that work should commence on the key elements in the scheme, namely the diversion weir, the sand filters, the reservoir, and the pumphouse.

A combination of labour-intensive/based and voluntary labour was used in this scheme. The labour-intensive approach simply means drawing labour for implementation of the project from the community to be served. In so doing, money which would otherwise leave the area in the form of wages and machinery is retained in the community. Thus, the only labour cost is the direct payment to the labourers - there are no costs in accommodating or transporting the labour force.

The rationale for considering labour-based construction for the KwaNyuswa project includes:

- retention of capital within a community
- temporary unemployment relief in the community
- transfer of technology
- stimulation of entrepreneurship
- unlike purely voluntary labour, the pace of construction tends to

work much faster in labour- intensive approach

- the promotion of community ownership of public works, which helps to guarantee the chances of their long- term maintenance

According to Rivett-Carnac's estimate (in Still 1991: 3), the savings on the project he has undertaken in the Umgeni Valley amounted to as much as 60%. Evidence of the benefits of this approach in South Africa abound.

For the KwaNyuswa project, the payment of labour for production was considered the most economic and the fairest by the committee. A labourer was typically expected to dig approximately 3 m of material per day. The corresponding length of the trench would be marked out by the foreman or gang supervisor at the start of each day and the labourer is free to go home after completion of that task. Taking the high unemployment rate in most rural areas, the labour-intensive method of construction brings temporary financial/ economic relief in the community.

5.4.5 Community-based management/Capacity building

The ability of a community to manage its own water supply services often leads to sustainable development. From the inception of this project, the importance of the community-based management of the scheme was emphasized to the committee. Also, mistakes made on the KwaHlophe project were avoided through the training and guidance of the committee in its role in the project.

At the outset, the Water Committee was trained and given hand-outs prepared by the researcher and her technical colleague, entitled "Community-based Management of Water Supply Services" (see

Appendix E). The Committee assumed its duties with great enthusiasm and this resulted in an efficient management of the project.

In preparation for efficient administration of the project, the committee armed itself with paysheets for the labourers, opened a cheque account upon advice of WATERTEK 's engineer for convenient payment of goods/materials, obtained letterheads and a stamp. Except for the cheque account, all these were the committee's own initiatives. Furthermore, the committee was pro-active in deciding on penalties for non-payers of the capital costs. This emanated from the fact that some community members were not interested in the beginning and only started showing interest when the tap was first turned on. Such community members were obliged to make double payments.

The KwaNyuswa Water Committee also hires and manages its labour force. The going unskilled labour rate is R10, although it has just gone up to R12. The rate is determined by the committee, who also keep time sheets for the labour team. Payment is strictly on an attendance basis, and there is stiff competition for the work.

In addition three skilled workers have been employed at R30 per day. The treasurer and the chairman for the Water Committee are responsible for the day to day supervision of construction. Therefore, it was decided that they also be remunerated at the rate of R600 per month.

Besides paid labour, a large amount of voluntary labour has been used on the scheme for the digging of the secondary and tertiary pipelines. Because it was a labour-intensive pipe-laying exercise, there was great interest when the first pipe went in. Members of the community have learned to do all the pipe-laying and jointing work themselves.

Construction of the project was completed by the end of February 1993. Already, the community has a vision for the electrification of the area as a following project, in particular the pumphouse.

5.4.6 Appropriate technology

Each level of improvement to the water supply will have associated costs. Most important is the protection of water supplies from bacteriological contamination by protection of springs, which is relatively cheap. This will ensure that water is at least safe to drink, but most people will still have to descend into the valleys to collect. The next step is to pipe water to public standpipes ideally not more than 250 metres from any settlement. This will raise the quality of life of people in the area by giving them water for more than just the essentials (50 litres per day per person, compared with the 13 litres currently used), and will significantly cut the time spent collecting water. This improvement is relatively expensive. The cost implications of the two options are laid out below.

Spring protection only

Taking the growth rate of 4.5 over the past decade, it is estimated that there are 313 families in the region. Therefore, it is fair to assume that, on average, 16 families share a spring. That would imply that about 20 springs are in use. The protection of these springs, with the construction of 5 000 litre tanks to store their outflow, would cost R1 000 each. This assumes that most of the labour is provided by the community itself, but does make allowance for some paid skilled labour. Allowance should also be made for, say, two public standpipes per spring (well constructed, with concrete base and soakaway, costing R100 each), plus 500 m of LDPE piping (costing R300). The amount of R5 000 is to allow for those in the community responsible for the implementation of the scheme to

obtain the necessary skills, wherever they may be lacking.

The estimated total cost of this option is **R50 000.**

Piping of water to public standpipes within 250 m of all settlements

With most of the settlements on the ridges, and most of the water 60 to 80 metres below in the valleys, the only way water can be piped to convenient points is by pumping it to one or more central, elevated distribution reservoirs. The first thing to note is that an area at the eastern end of the scheme is not included in the pipe network. The valleys in this area are so steep that it is feasible to pipe water from local springs to all the settlements, and this is cheaper than extending the pipe network.

Some 31 public tap stands have been provided for, and pipe diameters have been calculated to allow all 31 taps to discharge water simultaneously. Water is stored in two distribution tanks, a 40 m^3 tank at elevation 575 m near the western end of the network, and a 10 m^3 tank at elevation 530 m near the eastern end of the network.

The supply to the tanks will probably be obtained from a groundwater dam across one of the better yielding streams. (From the summarised borehole information it appears that the probability of striking a high yielding borehole is relatively low. At R40 per metre, the drilling of every hole drilled will cost about R2 000; whether it turns out to be worth exploiting or not. The data in the borehole record suggest that more than 10 boreholes will probably have to be drilled to ensure an adequate supply).

The estimated total cost of this option is **R243 000** - the community preference.

5.4.7 Summary and Conclusion

Unlike the Relela and KwaHlophe communities, the KwaNyuswa community identified its need for improved water supply, organised themselves, raised funds and approached WATERTEK for assistance. For most development agencies using the community-based approach, this is surely a typical project exemplifying what they would like to see happening all over the country. To reiterate the second main objective of undertaking pilot projects is to establish some guidelines which can be translated for use in other regions and the country as a whole. One may therefore deduce that the KwaHlophe project has achieved its goals, because, not only did the KwaNyuswa community approach WATERTEK, but several communities throughout the KwaZulu region and other parts of the country are approaching WATERTEK for assistance.

Although KwaNyuswa could be classified as a typical bottom-up initiated project, it should be noted that without KwaHlophe as a model, the KwaNyuswa project would not have been the success it is. Perhaps it is safe to conclude that the top-down and bottom-up synergy developed in this project.

Having had no promised sponsorship at the outset, the KwaNyuswa community had to establish facts such as the incidence of waterborne diseases, population size and so on to serve as a motivation for raising external funding for the project. Through this exercise, the community was empowered and developed a sense of ownership, responsibility and commitment to the project. Comparatively speaking, the KwaHlophe community did not have to go through the painful process of securing funds because Umgeni Water made funds available for the project. Although also empowered by the process, as first starters, the KwaHlophe 's experienced severe teething problems.

The success of this project is attributed to the management style of the chairman and treasurer respectively. The community's response to both the paid and voluntary labour, as well as their speedy contribution of capital costs are also cited as reasons for the success of the project. In view of the proximity of this project to KwaHlophe, the KwaNyuswa Water Committee was able to learn from the mistakes of KwaHlophe and accordingly avoided them.

5.5 SANITATION

As mentioned in page 97 of this chapter, an overview of sanitation will be given.

Inadequate sanitation systems in many rural and informal settlements of South Africa are already an enormous problem and they are certain to become more troublesome. While an improved water supply is demand-driven by beneficiary communities, sanitation seldom receives attention. Although there is much theoretical discussion by development organizations worldwide, no significant practical action has been taken to address this need. Hence, in the absence of a perceived demand for sanitation, through its proactive approach to promotion of this subsector, the Mvula Trust (1994: 13) is seeking to stimulate demand, while not sacrificing its overriding principle of responding to user initiative.

Appropriate sanitary facilities are as important as improved water supply. Therefore, in any project undertaken by WATERTEK sanitation is emphasized. Due to financial constraints, the people of all of the three communities/case studies presented, felt that water projects should precede sanitary ones. It was therefore agreed that effective promotion of sanitation would follow upon the completion of each project. However, for the KwaHlophe and KwaNyuswa projects described above, sanitation was promoted in terms of hands-on training of the construction of Sanitary Platforms (SanPlat) latrines, the cheapest on the market today. A few latrines were built at the KwaNyuswa pumphouse, and at

the Department of Health offices in Ndewdwe. Flipcharts on the construction of the Ventilated Improved Pit Latrines (VIP) were also used to demonstrate its construction in a step-by-step fashion.

Each water committee had nominated about three entrepreneurs for training for SanPlat construction. The idea was that the trainees would be employed by each committee to build latrines for the community. The committees had decided to adopt the Valley Trust's Credit Rotating fund method for building latrines. What happens is that a family approaches the committee for assistance with the construction of a VIP latrine. The family is expected to pay a deposit, and then the latrine is built by trained employees of the Water Committee, and the family pays the balance in monthly instalments. This system has functioned effectively in the Valley of a Thousand Hills for a few years, and so it was envisaged that it might also work in other areas. Another advantage of the Credit Revolving Fund was that the committee manages to have money reserves that could help in the expansion of the project. However, according to the latest information, the Credit Revolving Fund initiated by the Valley Trust is no longer sustainable. Apparently, people do not pay their instalments. Therefore the system has been abandoned (Christopher Geerdtz: 1993), personal communication).

As discussed earlier, the BWCC intends utilizing funds raised for the pilot water project to promote sanitation in the area. Dialogue between this committee and WATERTEK on this project is underway.

5.6 CONCLUSION

While major efforts were made to provide water supply and sanitation facilities for all during the past decade, progress was not as expected. There are many reasons for this - the most important of which was that facilities were given away with little or no involvement of the intended beneficiaries in the planning, implementation, and operation and maintenance of the schemes.

A lack of sufficient precedence in undertaking projects of this nature, due to South Africa 's isolation from international world over the past decade, has led to the country 's late absorption of readily available knowledge. Hence, in its effort to execute the decade's initiatives, WATERTEK went through the often frustrating and sometimes exciting learning process in undertaking the three pilot projects. What is encouraging is the fact that these lessons have laid a foundation for the newly established democratic government to implement water projects in the most efficient manner.

From the three case studies presented, a clear need for dialogical intervention with the intended beneficiaries has emerged. It was also clear that, through dialogical intervention with the intended beneficiaries, the water supply and sanitation needs could be addressed much faster and in a sustainable manner. It has also been demonstrated in these studies that tangible precedence could enable the intended beneficiaries to learn from the experiences of others. In that way, mistakes made in demonstration projects are avoided, and successes repeated.

It is also fair to say that most of the effort put into these case studies addressed water needs rather than sanitation. Concerted efforts should therefore be employed in addressing the sanitation issue more seriously. In addition to non-governmental initiatives such as the Mvula Trust, it is important for the government to provide clear guidelines to form the basis for development and to encourage the involvement of the private sector in this regard. The challenge of the 90s is, therefore, how to broaden our thinking and find creative means of promoting sanitation.

6.1 INTRODUCTION

Over the past few decades or so, the emphasis of many development agencies worldwide has been on the importance of community-based development. An essential premise of this emphasis is the realization that many development programmes that were based on macro-approaches to development have failed to achieve their goals. While the importance of these community-based approaches is acknowledged within development circles, it has been noted that no serious commitment has been invested in putting the ideas into action. Either ignorance regarding the actual meaning of these approaches or lack of co-ordinated effort could be cited as reasons for lack of success, particularly in government development programmes. For many non-government agencies, who for years have been involved in micro-approaches, these ideas are much easier to implement.

In community-based approaches it is assumed that development is for people, and it is therefore the people themselves who must have the ultimate say, and direct all development efforts. Hence, a participatory strategy is of vital importance for successful rural development. Julius Nyerere was quoted (Lowdermilk & Laitos 1981: 688) as saying :

> Rural development is based on participation of people in a mutual learning experience involving themselves and their local resources. People cannot be developed; they can develop themselves by participation in decisions and co-operative activities which affect their well-being. People are not being developed when they are herded like animals into new ventures.

In addition, Swanepoel (1988 :2) states that it is primarily the people living in an area that are to be developed and not the area itself. In this sense, rural

development is humanistic; it aims at the development of human beings.

Similarly, the effective and successful water supply and sanitation projects include not only appropriate technologies, but both micro-analysis and mobilization at the grassroots level.

This chapter aims at summarizing approaches adopted in the three case studies described in terms of **negotiation, need assessment, community participation, community-based management and appropriate technology** of water supply projects. Lessons learned in the process of executing these projects, similarities and recommendations are also briefly discussed.

6.2 SUMMARY OF RELATED KEY ISSUES

6.2.1 Negotiations

Up to this point, emphasis has been placed on the importance of dialogical intervention in water supply and sanitation schemes. The dialogical process means understanding the point of view of other parties while they also try to understand yours. In the three projects in which WATERTEK is involved, negotiations were initiated from different angles. Of importance, however, is the fact that the intended beneficiaries were engaged in the process.

Except for KwaNyuswa, negotiations to undertake the KwaHlophe and Relela projects were initiated from outside the community. The reason for the top-down approach was that rural communities have in the past not been afforded forums to freely express their needs. Whatever developments that took place in the villages were undertaken by the government. Hence, there had to be a starting point in the form of pilot projects to demonstrate possibilities for self-help in the improvement of the water supply situation. Ideally, the community should initiate negotiations

for their own projects. As exemplified by KwaNyuswa, this ensures commitment to successful implementation, and the sustainability of projects.

In KwaHlophe, the process of negotiation was short. However, it was met with great enthusiasm by the community. In Relela, the process was afforded sufficient time, and so the community was ready to start implementation of the project, had it not been for rivalry and competition from the government. Also, it became evident in the Relela project that negotiations with the government can become a much more complex and a time-consuming exercise than it is with the community. The bureaucratic nature, and the lack of capacity and willingness of the government to implement small-scale water projects using community-based approaches, are attributed to the complexity of negotiations experienced in that particular project.

In addition, the misguided policies of the past are also attributable to the complexity of negotiations with the government because of the mismanagement and corruption we often read about in the media. With the annual allocation of funds for rural water supply, there is no doubt that, if properly utilized, most communities would not have been devastated by the recent drought. Hence, L'ange (1994: 79) states that South Africa's drought is more a man-made than a natural phenomenon - caused by overgrazing, overcultivation, deforestation and so on. This has turned normally dry lands into drought lands.

With the mushrooming of development forums geared at conscientizing communities to assume responsiblity for development, it is hoped that many projects will henceforth be initiated from the bottom-up.

6.2.2 Need assessment

In view of the people-oriented approach adopted by **WATERTEK** to development, it was deemed imperative to undertake need assessment studies to ensure direct communication and interaction with the intended beneficiaries. Becoming informed requires more than looking at data generated from key informant interviews and community meetings.

Need assessment studies ensure that even the often marginalised and least articulate sectors of the community are effectively drawn in in the identification of needs. In addition, need assessment studies also enhance the feeling of recognition and acknowledgement of the intended beneficiaries worth in determining their own needs.

The outcome of the studies indicated that most people do not have reasonable access to a safe water supply and are aware of the health risks associated with the water they drink. A fair proportion of the people are experiencing or have experienced health problems due to water in the past. Incidences of waterborne diseases, in particular typhoid, still prevail in communities. It was further established that the majority of people are willing to contribute financially and in-kind for improved water supply.

It was also interesting to note that, although people never paid for water in the past, they do realize that the convenience of their water must be paid for. Another important factor which became evident from the results of these studies, particularly in KwaHlophe, was the fact that the younger generation and the more educated people are more prepared to contribute in whatever manner towards improved water supply. However, this is understandable because, in most instances, the older generation is financially insecure and more frail. Although the majority of people in Bolobedu were willing and eager to contribute financially and voluntary

labour to upgrade their water scheme, there was a general feeling that financial contribution to cover capital costs should be scaled down. At that stage the community was involved in building schools, clinics and so on, and thus had insufficient funds for capital costs.

It also became apparent that most people are aware of the fact that the lack of proper sanitary facilities is a health hazard. The taboo which traditionally prohibited the mixing of excreta for certain members of the family appears to have waned. Furthermore, the predominantly Shembe religion in the Ndwedwe area which promoted the scooping of a hole and the covering of excreta with soil as a means of disposal has now been replaced by a desire on the part of the people for proper sanitation. Most people have, therefore, shown a significant interest in building Ventilated Improved Pit Latrines (VIP). They realize that properly constructed latrines, without stench, lead to more regular usage than shabby and smelly ones. Due to financial limitations, most families prefer to build these latrines after construction of water supply schemes. The recent promotion of sanitation systems such as VIP and Sanitary Platforms (SanPlat) in Ndwedwe is more than welcomed.

Lastly, in spite of the fact that no formal need assessment study was undertaken in KwaNyuswa, the dialogical intervention and participatory education were more prevalent in this project than in the first two. Since its inception, the community contributed the self-imposed levy with great enthusiasm and without delay. During the community awareness day, through music, drama and speeches, they expressed their urgent need for improved water supply and sanitation. Also, the filling up of the school hall to beyond its capacity was a clear indication of the community's support for the project. Therefore, there was no need for a need assessment study. In fact, this is the ideal situation that all development agencies should strive for, namely the community's self motivation. However, it should be acknowledged that the latter community had a model, KwaHlophe, to follow,

hence their successful project.

6.2.3 Community participation

Over the past decade, the accent of most development experts was on community participation and less on the community management of the projects. Community participation should be the forerunner for community-based management. Without proper organizational structures, Mogane-Ramahotswa and Still (1992) add, even those projects that have registered effective community participation have no hope for sustainability. Therefore, institutional frameworks are vital for the allocation of responsibility, authority and control of the system.

Notwithstanding the fact that construction has not been effected in Relela - Bolobedu, and the fact that the project was initiated from outside, it is the researcher's guess that the management style for this project would have been more or less the same as in KwaNyuswa. The latter is based on the premise that the learning acquired in the KwaHlophe project has provided us with some insights to handle future projects circumspectly. Besides, sufficient time was allowed for consultation and information-sharing with the community. Furthermore the negotiation process we went through with the community has provided the basis for trust, and commitment to the project.

In spite of successful participation, the KwaHlophe scheme experienced serious managerial obstacles in the beginning. One of the reasons for this deficiency was the fact that the committee members were not trained for their roles in the execution of the project. Due to inexperience, WATERTEK took it for granted that any elected committee would undertake its duties without external support. Hence, one lesson learned in this project was a need for managerial training. Besides, the committee was not properly constituted. In the beginning, young able-bodied members of the

committee, with potential migratory employment capacity, were elected. They found jobs in town and therefore created vacancies in the committee. Also, the community had no previous experience in projects of this nature. All parties including the community were in a learning curve. Hence, with the co-option of literate young members to the committee, all efforts are made to make the project sustainable.

Having learned from mistakes of the KwaHlophe scheme, the KwaNyuswa Water Committee was well structured, properly representative and ready to manage the project from its inception. This committee developed letterheads, stamps, attendance sheets for labourers (skilled and unskilled), pay sheets, etc. Hence, implementation of this project has been very smooth indeed. Also, the fact that the KwaNyuswa project was initiated from the bottom-up instead of top-down, presupposes commitment and preparedness to work harder. They also had a model to follow in KwaHlophe. The KwaNyuswa project was not a totally bottom-up approach. Furthermore, the Nyuswa's were obliged to raise funds, whereas the Hlophe's funds were readily allocated by Umgeni Water. While acting as facilitators for the KwaNyuswa committee in drawing up proposals for funding of their project, WATERTEK managed to empower and help create self-reliance within the community. Had the Hlophes been through a similar process, positive results would have been achieved earlier. As a pilot project, the KwaHlophe scheme has successfully achieved its objectives. Currently, the whole of KwaZulu, and in some parts of the country, similar projects are being initiated. Therefore, it may be deduced that pilot projects are necessary conditions for community - based development.

Having been completed and inaugurated in February and September 1993 respectively, the project has been running very smoothly, both managerially and technically.

6.2.4 Community-based management/Capacity building

Any meaningful development will have to enjoy the full participation of the community and not be imposed from above. Hence, community participation was an integral part of the three case studies. In an effort to avoid underutilization or failure of the schemes, the researcher ensured optimum participation in the planning, design, implementation, operation and maintenance from the outset of the projects.

Community participation was achieved with reasonable success in the three case studies. Therefore, it is evident that community participation is a necessary and an important component of all successful water supply and other development projects. However, without enhancing community participation with community-based management and appropriate technology (discussed later), community participation is as good as nothing. Finally, it should be borne in mind that it is not easy to achieve effective participation without patience and perseverance. Community-based approaches are time consuming but fundamental for the sustainability of rural development.

6.2.5 Appropriate technology

Related to all aspects of water supply and sanitation improvements discussed in this study is appropriate technology (acceptable and affordable). It has been clearly demonstrated in the KwaHlophe project that if the technology does not operate as intended, the willingness and motivation to pay suddenly wane. An ability to operate and maintain the technology is of utmost importance. In both KwaHlophe and KwaNyuswa, the water minders/operators were trained to ensure the sustainability of both projects.

6.3 CONCLUSION

A great challenge is facing South African social scientists after the 27 April 1994 (the first democratic election day) as they encourage the capacity building of community-based organizations for rural development. In order to achieve success in these roles, social scientists need to engage themselves in the learning process, and become familiar with the needs of the communities they serve. It is unfortunately the case, Mouton (1989: 403) states, that social scientists in South Africa cannot deny that underdevelopment, economic and political oppression, poverty and unemployment, alienation and discrimination are some of the highest research priorities. Once this has been conceded, Mouton further states, the relevance of the new approach, with its emphasis on participatory involvement, dialogue, accountability and empowerment, become obvious.

Invaluable lessons have been learned in the three case studies. Most important among these are the following:

- Community-based approaches are of fundamental importance in the development of water supply, sanitation, and in rural development in general.
- In order to obtain optimum results in projects, it is important to raise the people's consciousness at the grassroots level rather than through imposition by the government.
- Community's self-initiated projects, with strong back-up support from development agencies, are more prone to success than projects initiated from the outside.
- Community-based management of water supply services is possible and it also leads to sustainable development.

It is hoped that this model will contribute to models for sustainable water supply and sanitation.

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APPENDIX A

AN INTERVIEW SCHEDULE (QUANTITATIVE DATA)
FOR NEED ASSESSMENT STUDY OF WATER SUPPLY AND SANITATION IN THE RELELA, VILLAGE OF BOLOBEDU - LEBOWA

C S I R

DIVISION OF WATER TECHNOLOGY

Project No 670 32839

Water Care Programme

AN INTERVIEW SCHEDULE (QUANTITATIVE DATA) FOR NEED ASSESSMENT STUDY OF WATER SUPPLY AND SANITATION IN THE RELELA, VILLAGE OF BOLOBEDU - LEBOWA

by

S B MOGANE-RAMAHOTSWA

PRETORIA
February 1991

OBJECTIVES

One of the objectives of the Appropriate Technology Group of the Water Care Programme, CSIR is to provide assistance to ensure the successful implementation of water supply and sanitation programmes in rural and peri-urban areas. Therefore, the aims of this study are:

- To assess the attitudes and needs of the community towards their water supply and sanitation.

- To establish the community's interest and willingness to work together to improve these aspects.

- To actually implement a pilot water supply and sanitation project along with the local community using appropriate technology.

- Finally, to generate policy guidelines in Lebowa.

Your participation in this study is important as it will help us to understand your perceptions of water supply and sanitation, the sources of assistance available to you and what services you still require.

The information you provide will be kept confidential.

A. PROFILE OF THE RESPONDENT AND HOUSEHOLD

1. Sex of the respondent - Male [ ] female [ ]

2. Home language - N Sotho [ ] Tsonga [ ] Venda [ ]

   Other, specify _____

3. What is your relationship to the head of the household?
   Wife/mother [ ] Husband/father [ ] Daughter [ ] Son [ ]
   Grandparent [ ] Grandchild [ ]

   Other, specify _____

4. a. What is your highest educational qualification?
b. What is the highest educational qualifications of head of the household?

FIELDWORKER: Fill in the table below.

TABLE 1

	RESPONDENT	HEAD OF HOUSEHOLD	
		MALE	FEMALE
Never attended school/ did not finish a class	1		
Substandards up to Std 2	2		
Std 3 up to Std 5	3		
Std 6 up to Std 8	4		
Std 9 up to Std 10	5		
Std 10 plus 1 or 2 years further training	6		
Std 10 plus 3 or more years further training	7		

5. a. Age of the respondent: 15-24 [ ] 25-34 [ ] 35 -44 [ ] 45 and above [ ]

b. Age of the head of the household: 15-24 [ ] 25-34 [ ] 35 -44 [ ] 45 and above [ ]

6. a. What is the occupation of head of the household?
Labourer [ ] Pensioner [ ] Professional/clerk [ ]
Business/Hawker/Spaza [ ]

Other, specify _____ [ ]

7. How many members of the household are contract/migrant workers more than 150 kilometres away from home? [ ]

8. How many members of the household are employed in neighbouring urban areas less than 150 kilometres away from home? [ ]

9. Number of persons in the family

TABLE 2

AGE	NUMBER
0 - 5 yrs	
6 - 10 yrs	
11 - 15 yrs	
16 - 20 yrs	
21 - 25 yrs	
26 - 60 yrs	
61 and above	

B. WATER SUPPLY

10. From where do you obtain most of your water? Spring [ ] Stream/River [ ] Rainwater tank [ ] Borehole [ ] Other, specify _____

11. How much water do you use per day (except for laundry)?

FIELDWORKER: Fill in the table below.

TABLE 3

CAPACITY OF CONTAINER USED FOR CARRYING WATER	HOW MANY CONTAINERS PER DAY	
	SUMMER	WINTER

12. What problems do you experience with your water supply? None [ ] Distance [ ] Communal Clashes [ ] Pollution [ ] Insufficient supply [ ] Other, specify _____

13. a. Do you think you can work with others to improve water supply? Yes [ ] No [ ] Perhaps [ ]

b. If so, would you be prepared to work voluntarily to improve water supply? e.g. dig trenches, build tanks, etc Yes [ ] No [ ] Perhaps [ ]

c. If not, state reasons _____

_____

14. How many households would you like to share your standpipe with? _____

C. SANITATION

15. What system do you use to dispose of excreta?
Own latrine [ ] Neighbour/relative's [ ] Bush [ ]
Other, specify _____

16. a. Do you think this is the healthy and best method of disposal? Yes [ ] No [ ] Don't know [ ]

b. If the answer is yes or no, state reasons _____

_____

D. HEALTH

17. Do you believe that the water you drink is - Healthy [ ]
Unhealthy [ ] Polluted [ ]

18. a. Do you know of any disease caused by polluted water?
Yes [ ] No [ ]

b. If yes, name the diseases _____

19. a. Does your family experience health problems due to water from the source(s) you use? Yes [ ] No [ ] Don't know [ ]

b. If yes, what are those problems? _____

20. a. Did your family experience health problems due to water from the source(s) you used in the past?
Yes [ ] No [ ] Don't know [ ]

b. If yes, what were those problems? _____

21. a. Did the family lose a member(s) due to deaths in the past three years? Yes [ ] No [ ]

b. If yes, at what age _____, and state reasons for the

death _____

E. AVERAGE HOUSEHOLD INCOME

22. What is the source(s) of the family's income? _____

_____

_____

23. How much does each gainfully employed family member (including yourself) contribute towards the upkeep of the family per month?

FIELDWORKER: Add all contributions that is, daily, weekly and fortnightly income and convert to monthly and fill in the table below.

TABLE 4

Less than R100 (including no income)	1
Between R100 and R299	2
Between R300 and R499	3
Between R500 and R699	4
Between R700 and R899	5
R900 and more	6

24. a. Would you be willing to pay on a monthly basis for your water supply? Yes [ ] No [ ] Uncertain [ ]

b. If so, how much _____

25. Comments by the respondents on these questions and other aspects _____

_____

THANK YOU!

E53/QUESTION/hh

APPENDIX B

AN INTERVIEW SCHEDULE FOR A SOCIOLOGICAL
NEED ASSESSMENT STUDY OF WATER SUPPLY AND SANITATION IN THE
KWAHLOPHE, AREA OF NDWEDWE - KWAZULU

CSIR

DIVISION OF WATER TECHNOLOGY

File No. 6/600/1

APPROPRIATE TECHNOLOGY PROGRAMME

An interview schedule for a sociological need assessment study of water supply and sanitation in the KwaHlophe area of Ndwedwe - KwaZulu

by

S B MOGANE (Miss)

Pretoria
February 1989

AIMS

The study has the following aims:

- To assess the attitudes of the people in KwaHlophe towards their water supply and sanitation
- To determine the needs of the community with reference to water and sanitation as well as other needs
- To assess the training needs including what training has been given
- To assess the community's potential interest in community participation and involvement
- Finally, to improve the CSIR's technology transfer data base

Your participation in this study is important as it will help us to understand your perceptions of water supply, sanitation, the sources of assistance available to you and what services you still require. The information you provide will be kept confidential.

HOUSEHOLD INTERVIEWS

A. Objective: Profile of the respondent

1. Family name .....

2. Date .....

3. Sex of respondent Male [ ] Female [ ]

4. Home language .....

5. What is your highest educational qualifications?

Table I

Never attended school/did not finish a class	1
Std 1 up to Std 3	2
Std 4 up to Std 5	3
Std 6 up to Std 8	4
Std 9 up to Std 10	5
Std 10 plus 1 or 2 years further training	6
Std 10 plus 3 or more years further training	7

6. Age: 15-24 [ ] 25-34 [ ] 35-44 [ ] 44 and above [ ]

7. What is your relationship to the head of the household?

Wife/Mother [ ] Husband/Father [ ] Daughter [ ] Son [ ] Grandparent [ ] Grandchild [ ] Other, specify ..... [ ]

B. **Objective: To determine accessibility, the source, water usage and whatever is considered good or bad to the respondent concerning water supply**

8. From where do you obtain most of your water?

   Spring [ ] River [ ] Rainwater tank [ ] Borehole [ ]

   Other, specify ..... [ ]

9. How long has your household been using this source?

   Since long [ ] 1-10 yrs [ ] Other, specify ..... [ ]

10. Who was responsible for the installation of the water supply system?

    Community [ ] Govt [ ] Nature [ ] Don't know [ ]

    Other, specify ..... [ ]

11. If the system is relatively new (1-10 yrs), ask what system did they use before

    Spring [ ] River [ ] Rainwater [ ] Borehole [ ]
    Don't know/Cannot remember [ ]

12. Has the new system made any improvements in the quality of your water?

    Yes [ ] No [ ] Don't know [ ]

13. Has the new system reduced the distance to the water source?

    Yes [ ] No [ ] Don't know [ ]

14. Who brings water to the house? Fieldworker fill in Table II according to answers obtained

    Table II

FAMILY MEMBER	CAPACITY OF CONTAINER USED FOR CARRYING WATER	HOW MANY CONTAINERS PER DAY? SUMMER	WINTER

15. Do you get enough water during summer from the same source? Yes [ ] No [ ]

16. Do you get enough water during winter from the same source? Yes [ ] No [ ]

17. How long is the distance to the water source? Fieldworker: Ask the respondent to show you the source and estimate if she cannot estimate

    0-250m [ ] 251-500m [ ] 501-750m [ ] 751-1000m [ ] 1001m and above [ ]

18. How long does it take for a round trip to fetch water without wasting time?

0-30 min [ ] 30-60 min [ ] 60-90 min [ ] 90 - 120 min [ ]

120 and above [ ]

19. Are there long queues, of more than ten people, at the main water source?
Yes [ ] No [ ] Sometimes [ ]

20. For what purpose do you use this water?

TABLE III

	N/A	SPRING	RIVER	RAINWATER TANK	BOREHOLE
Drinking					
Cooking					
Bathing					
Cleaning					
Laundry					
Animals					
Plants					

21. What do you like or dislike about water from the main source?

TABLE IV

	LIKE	DISLIKE
Colour		
Taste		
Smell		
Distance		
Other		

22. Is the water polluted? Yes [ ] No [ ]

23. If water is polluted, what is the source of pollution?

Animals [ ] Plants (algae) [ ] Human (soap etc.) [ ]

Other, specify ..... [ ]

24. Do you have problems in obtaining water from the source(s) you use?
Yes [ ] No [ ]

What are those problems?

Bad paths [ ] Communal clushes [ ] Distance [ ] Sickly [ ]

Other, specify ..... [ ]

25. Do you think it is important to have each of the following near the main (drinking) water source?

TABLE V

	IMPORTANT	NOT IMPORTANT
Water trough for animals		
Washing slab		
Vegetable garden		
Other, specify		

C. Objective: To find out if respondent associates water with health

26. Do you believe that the water you drink is

Healthy [ ] Unhealthy [ ] Polluted [ ] Unhygienic [ ]

27. Do you know of any diseases caused by polluted water? Yes [ ] No [ ]

28. Fieldworker: If answer to 27 is Yes, ask the respondent to name the diseases
.....
.....

29. Does your family experience health problems with water from the source(s) you use? Yes [ ] No [ ] Don't know [ ]

If the answer is Yes, ask what these problems are .....
.....

30. Did your family experience health problems due to water from the source(s) you used in the past? Yes [ ] No [ ] Don't know [ ]

If the answer is Yes, ask what these problems were .....
.....

31. If you do/did experience health problems with water, mention how you cure the disease

Faith healer [ ] Medical doctor [ ] Traditional doctor [ ]

Other, specify ..... [ ]

32. Which other treatment facilities do you know of?

Faith healer [ ] Medical doctor [ ] Tradional doctor [ ]

Don't know [ ] Other, specify ..... [ ]

33. Do you have access to a protected spring? Yes [ ] No [ ]

If Yes, what do you think about the quality of water from this source?

Good [ ] Bad [ ] Don't know [ ] Other, specify ..... [ ]

D. Objective: Average earnings per household to determine affordability and willingness to contribute towards the improvements of water supply

34. Do you believe that the time and effort employed in obtaining water is

too much [ ] normal [ ] little [ ]

35. Would you be willing to contribute money in order to obtain a closer source of water for drinking and other purposes? Yes [ ] No [ ]

If the answer is No, why?

Not interested [ ] Lack money [ ] Other, specify ..... [ ]

If the answer is Yes, ask how much can the respondent afford to contribute for a standpipe installed at a distance of about 250 m

Up to R10 [ ] R11 - R20 [ ] R21 - 30 [ ] R31 and above [ ]

36. How would you prefer to pay for water?

Fixed price per month [ ] Vendors [ ] Kiosk/coupon system [ ]

Other, specify [ ]

37. What is the occupation of head of the household? .....
.....

38. What is the main source of the family's income .....

39. How much does each gainfully employed family member (including yourself) contribute to the upkeep of the family per month?

TABLE VI

	WEEKLY	FORTNIGHTLY	MONTHLY
Mother			
Father			
Daughter			
Son			
Grandparent			
Grandchild			
Other			

Fieldworker: Add all contributions, that is, weekly, fortnightly, etc. and convert to monthly and fill in the table below:

TABLE VII

Less than R100 (including no income)	1
Between R100 and R299	2
Between R300 and R499	3
Between R500 and R699	4
Between R700 and R899	5
More than R900	6

40. Number of persons in the family staying at home daily

<15 yrs [ ] 15-60 yrs [ ] >60 yrs [ ]

41. Do you pay for your water supply? Yes [ ] No [ ]

If the answer is Yes, how much do you pay per week, day etc. Fieldworker convert to monthly payment .....

42. Do you think you can work with others to improve water supply?

Yes [ ] Perhaps [ ] No [ ]

If Yes, would you be prepared to work voluntarily to improve community water supply? Yes [ ] No [ ]

43. What kind of water supply improvement would you like to see in your community?

Protected springs [ ] Boreholes [ ] Standpipes [ ]

Other, specify ..... [ ]

E. Objective: To find out about excreta disposal and if the respondent observes any relationship between the disposal method and health

44. What system do you use to dispose of excreta?

Own latrine [ ] Neighbour/relatives' latrine [ ] Bush [ ]

Other, specify ..... [ ]

45. Which of these methods do you think is the best?

Latrine [ ] Bush [ ] Don't know [ ]

46. Fieldworker: If respondent has own latrine, continue with question 47

(a) Would you like to have a pit latrine? Yes [ ] No [ ]

(b) What kind of pit latrine do you prefer most?

VIP [ ] Ordinary [ ] Other ..... [ ]

(c) Would you be willing to spend money in order to build a toilet?
Yes [ ] No [ ]

(d) How much would you afford to spend in building a latrine?

R50-100 [ ] R101-150 [ ] R151-200 [ ] R201 and above [ ]

47. For those who have toilets, ask

(a) What sort of a toilet do you have? VIP latrine [ ]

Ordinary pit latrine [ ] Other, specify ..... [ ]

(b) What problems do you experience with your toilet?

Smell/Flies [ ] Fills up quickly/water [ ] Bad structure [ ]

Other, specify ..... [ ]

(c) What kind of detergents do you use to clean up the toilet?

Disinfectant [ ] Soap & water [ ] Don't clean [ ]
Other, specify ..... [ ]

48. If the answer to question 46a is No,state reasons

Cultural [ ] Religious [ ] Other, specify ..... [ ]

49. How do you dispose of your refuse/rubbish? On-site [ ] Anywhere [ ]
Burning [ ] Other, specify ..... [ ]

F. Objective: To determine the respondent's access to communication media

50. What access do you have to communication media?

Pamphlets [ ] Radio [ ] Health/Agricultural Officers [ ] TV [ ]
Schools/Clinics [ ] Development journals/Magazines [ ]
Other, specify ..... [ ]

51. Mention the communication media you prefer and understand most

Pamphlets/Leaflets [ ] Radio [ ] Health/Agricultural Officers [ ]
TV [ ] Schools/Clinics [ ] Development journals/Magazines [ ]
Other, specify ..... [ ]

52. If you were given a pamphlet with simple illustrations, written in your own language (Fieldworker: Show him/her the pamphlet) on how to construct/build a particular thing, would you understand and implement as illustrated?
Yes [ ] No [ ] Don't know [ ]

If answer is Yes, give suggestions for the improvement of this pamphlet/leaflet .....

G. Objective: To determine the availability of livestock in the community as well as the sources of water they use

53. Do you keep livestock? Yes [ ] No [ ]

If so, what type and how many in each category?

Cattle [ ] Sheep [ ] Goats [ ] Donkeys/Horses [ ] Pigs [ ]

Other, specify ..... [ ]

54. Where does your livestock graze?

Anywhere [ ] Communal camps [ ] Other, specify ..... [ ]

55. From which water source do the animals drink?

Spring [ ] River [ ] Rainwater tank [ ] Borehole [ ]

56. If they drink from the same source as people, ask, do you think this is
Good [ ] Bad [ ] Don't know [ ]

57. Comments by respondent on these questions .....

.....

58. Comments by fieldworker on all aspects of the interview .....

.....

THANK YOU

APPENDIX C

AN INTERVIEW SCHEDULE FOR KEY PEOPLE
IN THE KWAHLOPHE AREA, NDWEDWE - KWAZULU

CSIR

DIVISION OF WATER TECHNOLOGY

APPROPRIATE TECHNOLOGY PROGRAMME

File No. 6/600/1

AN INTERVIEW SCHEDULE FOR KEY PEOPLE IN THE KWAHLOPHE AREA, NDWEDWE - KWAZULU

by

S B Mogane (Miss)

PRETORIA
February 1989

KEY INFORMATION

The objective of these questions is to establish more about the developmental aspects and the training needs of the KwaHlophe community. The key informants in this case would be

i. Community leaders e.g. Inkosi, teachers, etc.
ii. Health and agricultural officers
iii. Representatives of the Ndwedwe Development Council, Thuthukani, ACAT etc.

1. What are your developmental objectives for the community?

2. What were your experiences in working with this community?

3. How much disease in the area is related to unsatisfactory water supplies?

4. Does the community water supply system ever break down? Yes [ ] No [ ]

   If it does,

   (a) who is responsible for repairs/maintenance? .....

   (b) how long does it take to repair it? .....

5. If there are delays, what is the cause thereof?

   Distance [ ] Poor communication [ ] Unavailability of tools [ ]

   Other, specify ..... [ ]

6. Who are the most influential persons in the community? .....

7. What is the community's response to community affairs?

   Good [ ] Fair [ ] Bad [ ] Other, specify ..... [ ]

8. What role should the community play in the provision of potable water supply? .....

9. What role should the government play in the provision of potable water supply? Subsidy [ ] Do all [ ] Other, specify ..... [ ]

10. Prioritize the development needs you would like to see in your community.

    .....

11. Who do you think should be responsible for these developments?

    Community [ ] Government [ ] Government and Community [ ]

    Other, specify ..... [ ]

12. Do you know of any other development committees or organizations working in your community? Yes [ ] No [ ]

    If answer is Yes, then

a. TABLE 1

N A M E	EXPLAIN ROLE
1	
2	
3	
4	

b. Evaluate activities of each Adequate [ ] Inadequate [ ]

c. Give further recommendations .....

.....

13. Are there enterprising persons in the community who, if given the necessary training, would oversee and direct the implementation of water supply projects ? Yes [ ] No [ ] Who?

(1) ..... (2) ..... (3) .....

14. Do some community members receive training on the construction, operation and maintenance of their water supply schemes? Yes [ ] No [ ]

15. What further training is needed for your community ? .....

.....

16. Do you think that your community will be able to understand a pamphlet with simple illustrations and written in their own language (such as this) and be able to build or construct a particular thing?

Yes [ ] No [ ] Some [ ] Don't know [ ]

If the answer is Yes or Some, give suggestions for the improvement of this pamphlet/leaflet .....

17. Comments by the respondent on these questions or any developmental aspect

.....

.....

THANK YOU

APPENDIX D

PROPOSAL FOR A RESEARCH STUDY ON
COMMUNITY PARTICIPATION IN A RURAL VILLAGE
WATER SUPPLY AND SANITATION UPGRADING
PROGRAMME, LEBOWA

CSIR

DIVISION OF WATER TECHNOLOGY

and

HSRC, ISODEM

PROPOSAL FOR A RESEARCH STUDY ON COMMUNITY PARTICIPATION IN A RURAL VILLAGE WATER SUPPLY AND SANITATION UPGRADING PROGRAMME, LEBOWA

PRETORIA
January 1991

1. INTRODUCTION

The Modjadji settlements in the Bolobedu district of Lebowa are highly populated with some 25 000 inhabitants. Unfortunately water supply and sanitation in the area are very rudimentary, and the incidence of typhoid and other sanitation related diseases are high. The number of case admitted at Kgapane Hospital are as follows:

DISEASE	AVE NO. CASES/MONTH	PERIOD
typhoid	70	Jan 87 - May 88
gastro-enteritis	60	Jan 88 - May 88
trachoma	355	Apr 88 - Jun 88

Certain of the villages in the area do have an improved water supply which has been installed by the government departments. Generally these involve pipelines with standpipes at intervals. These schemes did not involve the user communities in any way during implementation; have a fairly low coverage, were costly to install and are costly to maintain and operate. There is virtually no cost recovery and the community themselves have no option to improve the scheme by, for example, offering house connections to those who can afford it. The low level of coverage also means that the improved service only affects a few people.

The village of Relela in the district has no improved water supply. Water for domestic use is obtained from a dam, from the Nwanedzi River, and from various small springs and tributaries to the river. All these sources are polluted. Hygiene practices are poor and very few homes have toilets. This village therefore experiences one of the highest rates of sanitation related diseases in the district.

A water supply and sanitation improvement programme is planned for the village of Relela. This project will act as a pilot project which will be carefully evaluated to act as a basis for extending water supply and sanitation services to other villages in this district, as well as in other districts of Lebowa. The programme will aim at full community participation, particularly women in both the decision making processes, in the management and implementation processes and follow-up activities.

An important aspect of this pilot project will be to monitor and evaluate the sociological and institutional processes and structures before, during and after implementation of the project.

The Appropriate Technology Programme of the Division of Water Technology, CSIR has made contact with the relevant government departments in Lebowa, as well as with certain community leaders in the district. All have indicated enthusiasm for the proposed project, but funds, especially for the research aspects of the project, are seen by these departments as a stumbling block. Applications are being made to various organizations for partial or whole funding of both the manpower and material costs of the project. It is, therefore, the aim of this proposal to secure any amount of funds that could be made available for this project.

2. RESEARCH PLAN

The village of Relela constitutes some 1000+ homes with more than 5000 inhabitants. Water supply and sanitation facilities in the village are minimal, but the residents do rate water supply as one of their greatest needs.

The proposed research plan can be divided up into four main phases as follows:

i) assessment of existing situation
ii) pre-implementation phase
iii) implementation phase
iv) post-implementation phase

2.1 Assessment of existing situation

This part of the study will entail an assessment of the current water supply and sanitation situation. The attitudes and general practices of the residents will be assessed by means of small group interviews and a survey to determine such factors as:

- amount of water used
- distance to water source
- means of transport and type and state of household containers
- perceptions of quality of water
- understanding of health implications of contaminated water and poor hygiene
- attitudes to sanitation
- average household income and willingness to contribute towards improved water supplies
- existing development committees and authorities
- willingness to contribute labour

2.2 Pre-implementation phase

During this phase a number of activities will take place, including:

- increased education thrust on health and hygiene related to water supply and sanitation (carried out by Dept of Health field workers);
- formation and constitution of a water committee;
- training offered to certain committee members in leadership and administration, and to certain community members in simple construction and pipe-laying techniques;
- choice and decision by community on type of water supply scheme they would like and are prepared to contribute towards, operate and maintain;
- communication to community on implications of decision, what scheme will look like, and what they will be required to contribute and do;
- securement of support funding to cover costs of material and skilled labour, and
- design of chosen water supply system, including water abstraction, treatment, storage and distribution. (The design will be based on appropriate technologies for rural areas in developing countries, with emphasis on affordability, low operation and maintenance requirements, robustness, manageable by less skilled personnel).

2.3 Implementation phase

During implementation the research team will monitor a number of aspects related to community participation and management. In particular it will be important to monitor the following:

- extent to which voluntary labour is supplied;
- perception of community's sense of ownership and pride in the scheme;
- functioning of water committee;
- collection and allocation of funds, and
- quality of workmanship in the water supply scheme.

2.4 Post-implementation phase

After the water supply network has been installed, the research team will evaluate and monitor a number of aspects related to the operation, maintenance and administration of the scheme, as well as other benefits of the scheme. In particular the following will be evaluated:

- water supply and utilization at outlet points;
- change in water use and hygiene practices;
- payment of maintenance levies;
- drinking water quality control aspects;
- sanitary surveys;
- operation and maintenance aspects;
- administrative aspects and efficiency;
- change in community attitudes with regards to water supply and sanitation;
- cost recovery and accumulation of reserve funds;
- projection of health improvements;
- number of residents who choose to construct a pit-latrine;
- assessment of economic and commercial benefits for the community.

The research team would submit a report on each phase of the project, and a final overall one at the end of the project.

3. RESEARCH TEAM

The research team will be made up as follows:

Water Care Programme, Division of Water Technology, CSIR:

Mrs Baby Mogane-Ramahotswa	B.Soc Sc(Hons)	6 years experience
Mr Cecil Chibi	M.Sc (Environ. Eng.)	3 years experience
Mr Philip Solsona	M.Sc (Sanit. Eng)	21 years experience
Mr Ian Pearson	M.Sc (Civil Eng.)	13 years experience

ISODEM, HSRC: (Centre for Planning Research)
Dr Tony Emmett Ph.D Soc Sc

4. FINANCIAL IMPLICATIONS

The total cost for the project will be R510 000 (includes both the construction and research costs).

4.1 Research costs

The project will be in four phases:

Phase 1 (Existing situation)		
Transport (3000 km @ 60c/km)		R 1 800
Accommodation + expenses		R 3 000
Manpower (360 h @ R70/h)		R25 200
	Total	R30 000
Phase 2 (Pre-implementation)		
Transport (5000 km @ 60c/km)		R 3 000
Training		R 1 500
Printing + other running costs		R 3 500
Manpower (400 h @ R70/h)		R28 000
	Total	R36 000
Phase 3 (Implementation)		
Transport (6000 km @ 65c/km)		R 3 900
Expenses		R 4 850
Manpower (150 h @ R75/h)		R11 250
	Total	R20 000
Phase 4 (Post-implementation)		
Transport (5000 km @ 70c/km)		R 3 500
Expenses		R 4 500
Manpower (200 h @ R80/h)		R16 000
	Total	R24 000
Total for four phases		R110 000

4.2 Construction costs (estimate)

A preliminary feasibility study into the most appropriate water supply options for the area has been carried out. It is believed that a system comprising protected springs/weirs, chlorinators, reservoirs and reticulation would be suitable.

The financial implications (construction) for such a scheme are as follows:

Pipes: mains	(75 mm	R 75 000
secondaries	(40 mm)	R135 000
branches	(25 mm)	R 45 000
Protected Springs/weirs		R 8 000
Reservoirs: (5 000 l) 8 of		R 20 000
(40 000 l) 4 of		R 40 000
Standpipes: 60 of		R 2 000

Chlorinators:	4 of	R 5 000
Labour costs:	(5 000 man days at R10/day)	R 50 000
Contingencies:		R 20 000
TOTAL		R400 000

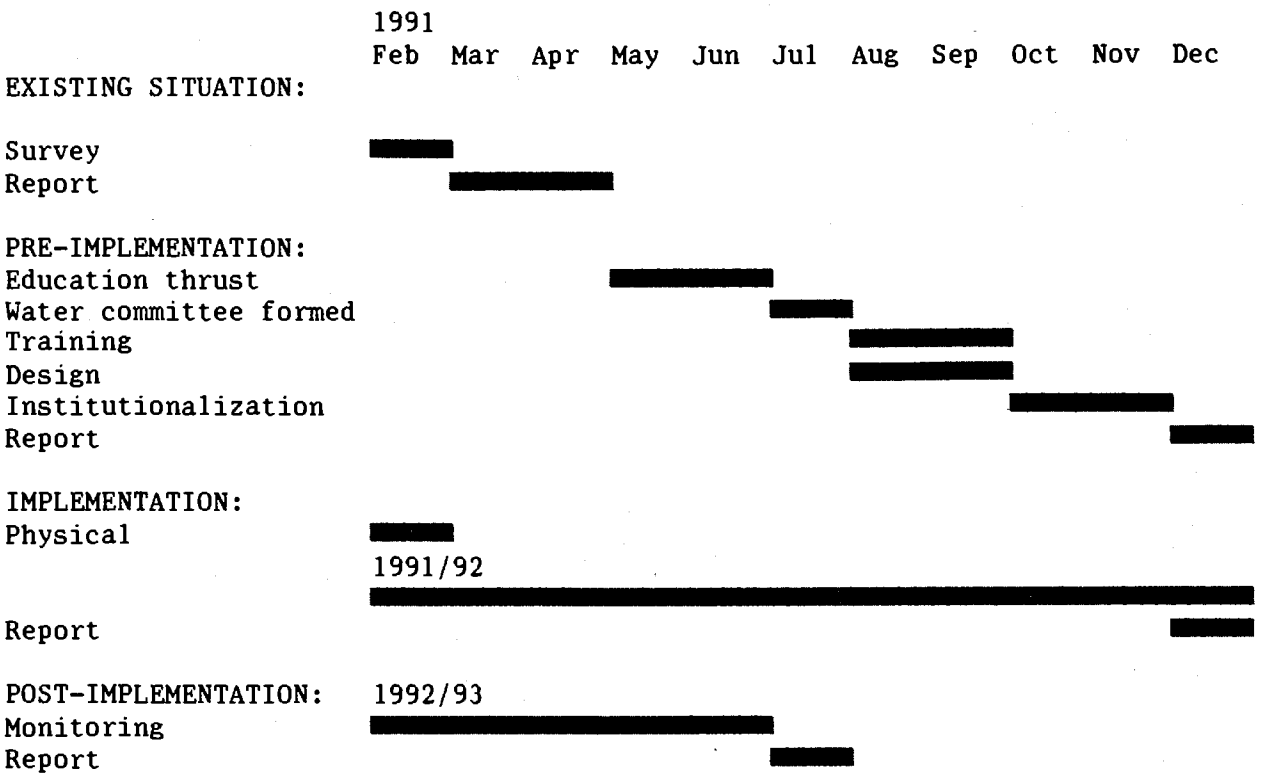
It should be noted that the construction costs above (R400 000) will be used during the third phase of the project (see 4.1). An aerial photograph of the study area which depicts the proposed pipeline route has been attached.

5. TIME SCHEDULE (Gantt chart)

It is expected that the time scheduling of the above phases of the project will be as follows:

i)	Existing situation:	
	survey	February 91
	report	March 91
ii)	Pre-implementation:	
	education thrust	April 91
	training	April/May 91
	design	April/May 91
	institutionalization	June/July 91
	report	August/September 91
iii)	Implementation:	
	physical	October 91 - August 92
	report	August/September 92
iv)	Post implementation	
	monitoring	October 92 - Feb 93
	report	February/March 93

GANTT CHART



6. CONCLUSION

It is believed that this proposed study will be invaluable in aiding planners (particularly in Lebowa) to select alternative low cost sustainable water supply schemes in the future. The insights gained on the vital aspects of community participation, administration, maintenance, cost recovery, education needs, and others will aid developers to greatly improve their approach to such schemes. The results of this study may enable services to be supplied to rural villages with the possibility of far greater coverage than is presently possible with the existing first world technology and funding.

APPENDIX E

A MANUAL ON COMMUNITY-BASED MANAGEMENT
OF WATER SUPPLY SERVICES

Water
Technology

CSIR

COMMUNITY-BASED MANAGEMENT OF WATER SUPPLY SERVICES

Compiled by Baby Mogane-Ramahotswa
and Dave Still

C S I R
DIVISION OF WATER TECHNOLOGY

Water Care Programme

GUIDE TO COMMUNITY-BASED MANAGEMENT OF WATER SUPPLY SERVICES

by

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1. INTRODUCTION

One of the most important aspects for sustainability of water supply is the ability of the community to manage its own scheme. Unlike urban settlements, institutional arrangements for rural water supply are rudimentary. Over the past decade, the accent of most development experts was on community ***participation*** and less so on community ***management*** of the schemes. Indeed, community participation provides what McCommon et al (1990:9) calls an ***enabling environment*** required for community management. Without proper organizational structures, even those projects which have registered effective community participation have no hope of sustainability. Therefore institutional frameworks are vital for the allocation of responsibility, authority and control of the system.

This guide discusses existing institutional structures in developing areas, the functions of the water committee, simple bookkeeping and financial management, operation and maintenance, health education as well as the importance of public relations. This document does not claim to deal with all the problems related to the management of water supply. All it does is to provide guidelines based mainly on field experience as well as on literature in water supply and sanitation.

2. EXISTING INSTITUTIONAL FRAMEWORK IN DEVELOPING AREAS

Generally in developing areas (informal settlements and rural) we find one or all of the following structures:

2.1 Tribal Authorities and Traditional Leaders

In most South African rural areas there are tribal authorities in the form of a chief and his councillors/indunas/ditona. Tribal authorities are legal entities representing communities at the local and central government levels. These leaders play the most important role of running all community affairs, co-ordinating development activities and settling disputes among community members. At the outset, the chief/inkosi/kgosi must be involved in need identification and planning for all developments taking place in the community. Even if he may not actively get involved in the project due to other commitments, his blessing must be elicited.

2.2 District Development Councils

All development activities including water supply, electrification, roads and community gardens are co-ordinated by Development Councils. These councils are normally constituted by both the professional and business people in the districts. The councils work hand in glove with tribal authorities to identify, prioritize, plan and execute development projects. It is always essential for these bodies not to overstep the authority of the local traditional leaders.

2.3 Residents' Associations/Organizations

The recent opening up of political activity in South Africa has led to the mushrooming of alternative community structures which are geared at addressing developmental issues in developing areas. These structures, which are mainly constituted by the younger generation, have spearheaded several initiatives and urged the involvement of the government in addressing community development. In some cases, residents' organizations have been accused of overstepping the authority of traditional leaders. However, experience has shown that through proper consultations and negotiations, all leaders manage to cooperate in order to achieve success in development projects.

2.4 Government extension workers

In spite of the fact that the community should take charge of their water supply, it is essential that the government extension workers support the projects. In South Africa, we normally find the Departments of Health and Agriculture's representatives in the villages. These people can play a major role in community development and thus efforts must be made to involve them as much as possible. Besides, they have the resources to support communities both technically and administratively. Also, the government is available to oversee the sustainability of projects when the technical support group withdraws from the area.

2.5 Communities

To a large extent, the capacity of a community to improve and manage their water supply scheme depends on previous experience with other development projects. For some communities cooperation and support for changes is more easily elicited than for others. Therefore, patience, empathy and motivation should be exercised to get all the community's participation in the water project. Maximum participation at all levels is therefore important in the planning and execution of the project.

In short, co-operation of all abovementioned structures to form a water committee is essential.

3. THE WATER COMMITTEE

Despite the fact that all the abovementioned structures are involved in community development issues, including water supply, it is essential that an independent body be established to deal specifically with the management of water supply.

This body could ideally be in the form of an elected committee representing all levels of the community. The water committee plays the most important role of mobilizing or motivating the community, applying for funding of the project, supporting technical and other community development groups whenever they are in the areas and reporting to the chief/authorities about progress and new developments. Details of the functions of the Water Committee and its constitution are outlined in the following section.

3.1 Functions of a Water Committee

A water project has three phases: preparation, implementation and administration. The functions of the water committee change as the project moves from phase to phase, and are discussed accordingly in the ensuing section.

3.1.1 Phase 1: Preparation for Project

This is the most crucial phase in which a solid foundation for the sustainable management of a water supply project can be laid. At the outset, the committee should:

- Undertake a simple need assessment study to ensure that the intended beneficiaries/villagers are in favour of the project (see appendix for a sample of relevant questions to be asked). Need assessment could be done either in groups, community meetings or individual households interviews.
- Define their objectives and goals regarding the water quality, quantity, distribution or level of services (e.g. standpipes or house connections), and possible expansion of services in future.
- Educate and motivate the community to achieve their goals. Elicit the community's willingness to invest in capital and running costs.
- Solicit technical support to obtain costs for various project alternatives.
- Effectively raise funds from both within and outside the community (possibly with logistical support from an outside agency). See Appendix 2 for aspects that need consideration when making an application for funding.
- Decide on disciplinary measures to be taken against those who default in payments and labour contribution.

WATER COMMITTEE MEETING

- Draw up contracts with the community, with the technical support group and with funding organizations/sponsors.
- Decide on concessionary measures to be taken for the aged and the poor families who may not be able to afford both the capital and running costs.
- Set up tariff schedules and mechanisms for collection.
- Keep financial records of all transactions.

PROJECT IMPLEMENTATION

3.1.2 Phase 2: Project Construction/Implementation

This is also a crucial phase in terms of management functions of the Water Committee. During this phase, the Committee should:

- Convene meetings to motivate and jointly organize labour contribution and collection of money and, also decide on disciplinary measures to be taken against defaulters within the community.
- Undertake planning and scheduling of construction, ordering and storing materials, and soliciting technical support.
- Together with the technical support group finalize the design, especially the location of taps in consultation with the community.
- Select one or two people for training in operation and maintenance of the scheme.
- Keep financial records of all transactions to date and exercise accountability to all parties involved in the project.
- The committee should maintain sound communication and human relations with its own community, neighbouring communities, government extension workers, technical support group and sponsors.

3.1.3 Phase 3: Administration

This is the most crucial phase in which both the technical support group and the sponsors gradually withdraw from the community. Therefore, the committee should be well prepared to continue

with responsibility of managing the scheme with minimal back-up support of the government employees. At this stage, the committee should:

- See to an appropriate water quality monitoring system.
- Institute a supervision strategy for operation and maintenance.
- Plan for future extension/expansion of the system.
- Keep financial records of all transactions and maintain an appropriate fee collection mechanism.
- Exercise disciplinary measures against defaulters and vandals.
- Maintain healthy and sound communications both within and outside the community.

3.2 Constitution of a Water Project

It is a well-known fact that every successful organization or establishment has a set of rules and policies to govern its operations. Therefore, it is of crucial importance for a Water Committee to also establish its own set of rules and to guide members during the course of project implementation. Moreover, for some sponsors a constitution is a prerequisite in considering sponsorship of projects. An example of a constitution is thus:

3.2.1 Name

For example, the project will be known as Intutuko or Tswelopele Water Project.

3.2.2 Area of operation

This should describe the geographical area, be it a tribal authority, regional or local government in which the project will be operational.

3.2.3 Aims and Objectives

Aims and objectives of the project should be clearly stipulated. For example, one of the objectives of the project in this case would be the improvement and provision of water supply and sanitation as a means of promoting the health and well-being of a community.

3.2.4 Membership

Eligibility of membership to the project should be clearly stated. For example, membership shall be open to all community members of a particular tribal authority.

3.2.5 The Water Committee

The affairs of the project will be administered and managed by a democratically elected committee which is the decision and policy-making body. The inclusion of women on this Water Committee has been found to enhance the likelihood of project success, because women are so central to the welfare of any community.

The key offices on the committee are those of the chairman, secretary and treasurer. Additional members should ensure an adequately broad representation of the community. The number should however not be too large as this will decrease the committee's ability to get things done.

It is also important to state the period for which the Water Committee will hold office. For developing communities with few leaders, it might be advantageous for office bearers to hold their positions for at least three years. Vacancies occurring during the period of the Water Committee's operation can be filled by co-option of paid up members who will hold office until the next election.

The new committee should be elected at the last Annual General Meeting of the agreed upon period.

3.2.6 Functions and Powers of the Water Committee

- **The Chairman and Vice Chairman**

  The Chairman's duties are:

  - To convene and preside at all meetings of the project and in his absence the vice-chairman should act in his seat.
  - To inform members of the community well in advance about the date, time and venue of the meeting.
  - To draw up an agenda of each item to be discussed at the meeting (the secretary and other members should help him in this task).
  - To open meetings, introduce matters to be discussed and give everyone a chance to speak or contribute whilst leading the discussion until conclusions and decisions are reached.
  - To make rulings on procedural matters of urgency and such rulings will be deemed final.
  - To ensure that all decisions made are being carried out by members of the Water Committee and community.

- **The Treasurer**

  The treasurer's duties are to look after all financial matters of the project that include:

  - Keeping a record of the names of the people or families who contribute towards the capital and recurrent cost of the scheme.
  - Keeping books of income and expenditure.
  - Receiving all monies and depositing them in a bank decided upon by the committee whose signatories shall be the treasurer, the chairman and the secretary.
  - Authorization of payment for services or materials.
  - Submission of regular figures/statements.

- **The Secretary and Vice Secretary**

  All correspondence and written work are the duties of the secretary and include:

  - Keeping a proper record of all the meetings in the minute book.
  - Writing letters and keeping correspondence for

SECRETARY TAKING MINUTES

the committee. Noting the names of people or families who contribute labour during implementation of the scheme and those who do not.

- In his/her absence, the vice-secretary or treasurer to undertake all duties of the secretary.

- **Additional Members**

  Despite the fact that additional members have no specific tasks to perform, they do however play an important role in the committee. Their functions include:

  - Active participation in committee meetings in terms of offering advice to other members and contributing new ideas.
  - To assist the treasurer with fee collection for both the capital and running costs of the scheme in their respective areas or regions.
  - Assist in organizing voluntary or in-kind donation of labour and skills from community members in their regions.

- **Co-Opted and Ex-Officio Members**

  This category may consist of government extension workers, professional or business people or any other person in a community who may have a particular contribution to make to the schemes.

3.2.7 Convening of meetings

- Depending on the needs, committee meetings may be held once a month to report on progress made and to plan action for the future.
- Upon instruction of the Water Committee, the secretary will distribute notices and agendas of the meeting to all members.
- The Water Committee has full powers to call a special meeting as it may deem necessary.
- The Annual General meeting will be held as soon as possible after the end of the financial year which will for example be from 1 April each year to 31 March of the following year.

3.2.8 Contributions

- Members are liable for contribution of a amount to be fixed by a general community meeting to cover in part the capital costs of the scheme.
- Joint efforts will be pursued by all community members in contributing labour by way of digging trenches, laying pipes, collecting and bringing local materials and in rendering whatever assistance that would be deemed necessary to the project.
- Members are liable for the contributin of an amount to be fixed from time to time by the Water Committee towards the operation and maintenance of the scheme.

3.2.9 Training

Should the need arise for training of key members of the committee on management and administration of the project, it will be done either on-site through workshops or by sending members to an institution capable of offering such services at the committee's expense.

3.2.10 Amendments

No addition(s), alterations(s) or amendment(s) to the constitution will be passed unless approved by two- thirds of the members present at any general or special meeting.

3.2.11 Dissolution

The project may be dissolved by a special resolution adopted by at least two-thirds of the members. If upon dissolution of the project there remain any assets whatsoever after the payment of all its debts and liabilities, such assets may be sold to other projects having similar objectives, as may be decided upon by members at the general meeting at which it was decided to dissolve the project.

4. FINANCIAL MANAGEMENT AND BOOKKEEPING

In spite of the fact that the financial management of the project is entrusted to the treasurer, and that the latter's functions have already been stipulated in the previous section it is essential to expand on how these funds could be best managed. Other committee members also need to have some skills in financial management seeing that they are also involved in collecting public funds.

Furthermore, should the treasurer vacate his position, it will be easier for the committee to replace him if they have kept abreast of financial matters. For best management, it is of crucial importance for all committee members to understand the rationale or reasons for cost recovery which include:

- The requirement for sustainability and continuity of services.
- The need for replacement, expansion or extension of the project or services, for example, household connections and quality improvements.
- Raising community awareness and appreciation of the value of drinking water and sanitation.
- The need to distinguish between responsibilities of user community and the water supply agencies.
- Lastly, the community develops a sense of ownership, responsibility and pride in the projects wherein they have contributed in-kind or financially (Wang et al, 1988:10).

Five most important points to remember when dealing with public funds as indicated in M B Consulting (1987:32) are as follows:

- Collect money from everybody according to the rules agreed upon by the community.
- Keep petty cash in a safe place.
- Use money for community water supply purposes only, in ways which are known to everybody.
- Record income and expenditure regularly.
- Report to the community from time to time on how much money has been used, and how much remains.

In cases of big schemes, the Water Committee could devolve responsibility for collection of revenue to community members for example, tap committees or spring associations could be formed to oversee collection of funds and operation and maintenance of scheme at local levels. For piped water supply, a coupon system whereby members of a community purchase coupons from the treasurer and/or neighbouring shops which entitle them to a number of 25 litre containers of water, could be introduced. The Committee could employ attendants to administer the supply at drawing points as is done in the Valley of a Thousand Hills near Durban. This system is reported to work smoothly without defaulting payment (Mann, 1985:39).

4.1 Income and expenditure

- **Income may arise from:**
  - Community's contributions to capital and running costs
  - Donations from sponsors - be they private companies, parastatals or government
  - Fundraising functions such as football matches, film shows, bazaars, etc.
  - Community's payment of running costs or services
  - Fines arising from penalties for vandalism or non-contribution of in-kind labour during construction.
  - Membership fees from people who moved into the village-newcomers and newly married couples from the village.
  - Special collection of money for purposes such as an official opening ceremony of the scheme.
- **Expenditure may arise from:**
  - Monthly purchases of diesel.
  - Transport to and from town for purposes of village water supply, for example, banking, withdrawals, etc.
  - Purchases of stationery and other administration books.
  - Wage payment for the water minder or pump attendant.
  - Purchases of spare parts such as taps, pipes, washers and payment of skilled technician to make repairs which may be too difficult for the water minder.
  - Repayment of loan taken during construction of the scheme. ***REMEMBER - this is a contract you might have entered into with the agency concerned.***

4.2 Requirements for basic Bookkeeping

Bookkeeping simply means keeping records of all the money received, spent and the balance thereof. The following will appear in the book:

- Income: All the money received either through membership contributions, subscriptions, donations, fundraising bazaars etc.
- Expenditure: All the money that is spent on the project to purchase diesel, spare parts, hire labour, pay the water minder, pay for transport etc.
- Balance: This reflects the amount of money that is left in the bank at at given time.

The rationale for bookkeeping includes:

- The fact that the money belongs to members and not the committee, chairman or treasurer. Therefore, all members have the right to know what happens to the money.
- The money must be used responsibly. Record keeping helps us to know how much money we have and how much is still needed. The money must be used properly.
- The money must be safe. It is very important that the organization's money is not lost or stolen. The best way to keep money safe is in the bank. However, petty cash for day-to-day use could be kept with the treasurer (Human Awareness Programme:3).

For simple record keeping and collection of revenue from the user community, it is suggested that the committee allocate responsibilities to all its members according to areas or regions. The easiest way of keeping records is to have the following books:

4.2.1 Household Register

This should be a foolscap size notebook with a hard cover wherein names of all affiliated families are entered. This book can also be used to record monthly payments on contributions towards the capital costs of the scheme. For ease of reference, it is suggested that this book be kept by the treasurer.

Depending on the amount required to cover the capital costs, it is suggested that the committee decide on a period upon which members should have paid up the total amount required. In setting up the period, the committee should bear in mind the economically disadvantaged families who may not be able to afford a lump sum payment over a one or two month period. In that case then, columns should be drawn and monthly contributions entered next to names of all families. A register will look like this:

FAMILY NAME	MONTHLY CONTRIBUTIONS												TOTAL
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Dlangamandla	R10			R10	R10	R10	R10	R10	R10	R10	R10	R10	R100
Nala	R50				R50								R100
Mnisi	R100												R100
Mamela	R50	R50											R100
TOTAL													

TABLE 1: HOUSEHOLD REGISTER

NB.Should the Committee decide to collect the money over a period of three months, then it is not necessary to draw twelve month columns but only the required months.

It is also important for the committee to consider making concessions for the very poor and pensioners who are willing to cooperate in whatever manner but have financial constraints. Instead of paying the full amount, the poor should be asked for one third thereof or may be exempted from payment of capital costs. Also, the business and professional elite of the community could be requested to pay slightly more in order to subsidize the disadvantaged families. All possibilities should be explored, and whatever decision taken, the community should be made aware, or rather be given a chance to give their views.

4.2.2 Regional or area notebook

This need not be a hard cover but an ordinary foolscap or A4 size notebook wherein area representatives of the committee note in names and contributions of all families in their respective areas. The same recording format as the household register may be followed but it is not essential. This book may be divided into two parts to record the capital and running costs separately.

Area representatives should submit this information and money to the treasurer who in turn will record it in the household register. Upon payment of money, the treasurer should immediately issue receipts.

4.2.3 Receipt Book

In modern life, people demand receipts as proof of an amount paid. Receipts are also an important reflection of the amount of money received by the treasurer. In view of the fact that some rural communities are often required to contribute towards both the capital and running costs of the scheme, it is advisable that two receipt books be kept to record payment of these aspects separately. This is done in order to avoid confusion regarding payments. However, one receipt book would suffice for those communities who only have to pay for the running costs. Always ensure that duplicates are kept in the receipt book.

A receipt book looks like this:

No. 373	1992.01.26	R	c
Received from :	J.M. Mokoena	10	00
Ontvang van :			
the sum of :	Ten Rand/		
die som van :	Nil Cent		
:	Sent		
For/Vir :	Operation and maintenance		
With thanks/Met dank			

TABLE 2: A RECEIPT BOOK

No. 374	1992.02.20	R	c
Received from :	Sekhukhuna Hlophe	10.	00
Ontvang van :			
the sum of :	Thirty Rand/		
die som van :	Cent		
:	Nil Sent		
For/Vir :	Running Costs		
With thanks/Met dank			

4.2.4 Daily Cash Record Book

In this book, also a foolscap/A4 size with hard cover, income, expenditure and savings are recorded on a daily basis. The treasurer should record the money he receives - **INCOME**, the money which is spent - **EXPENSES** and the money put in the bank - **SAVINGS.**

INCOME					EXPENDITURE			
DATE	NAME	PURPOSE	AMOUNT IN R	c	DATE	PURPOSE	AMOUNT IN R	c
4-1-92	Malindi	Capital costs	30	00	2-2-92	Meter minder	40	00
15-1-92	Mantsepen	Capital costs	20	00		Transport	5	00
15-1-92	Ceba-Ketwelo	Capital costs	30	00		Diesel	20	00
17-1-92	Mamonyane	Capital costs	15	00		TOTAL	65	00
19-2-92	Busiku	Capital costs	20	00				
		TOTAL INCOME	115	00		BALANCE	50	00

TABLE 3: INCOME AND EXPENDITURE CASH RECORD BOOK

Note: For all above expenses, there should be proof of payment in the form of a receipt or whatever document signed by the provider of services. Invoices must also be kept to provide information about what was purchased.

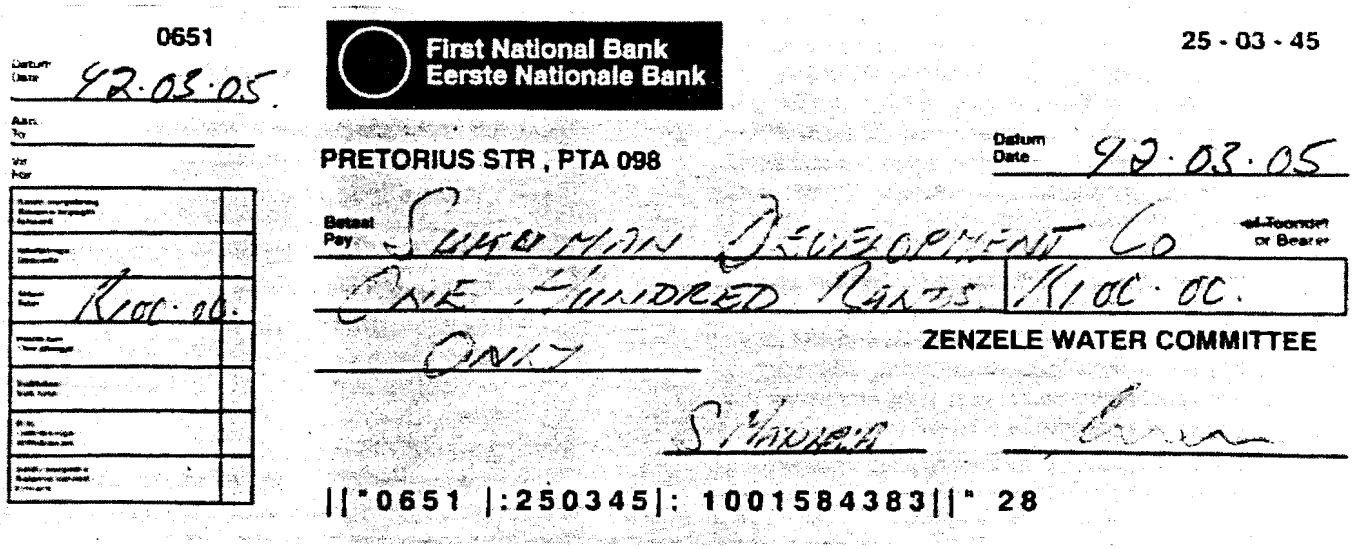
The Committee should check this book regularly to see the total amount which is in the treasury or spent. This book could also be used to record fines arising from defaulters or cash payment or contribution of voluntary labour during construction of the scheme.

4.2.5 Savings/Trust/Cheque/Account

Fortunately, most developing communities in South Africa are already accustomed to the idea of saving money in the bank rather than keeping it at home. This trend gained momentum with the introduction of burial societies, women's clubs, etc. during the late seventies. Hence, there is no longer a need for community motivation to take their monies to the bank. There are three options available for saving community funds namely:

- An ordinary Bank Savings Account
- Trust Account with local Magistrate.
- A current or cheque book account.

Depending on the proximity, the Committee may choose to utilize any of these facilities. In the first two cases, three signatories would be required for withdrawals of money, whereas only two signatories are required in the case of a current account. Besides, with a current account there is no need for signatories to make the trip to the bank each time they need money as they can purchase goods directly. This can make a great difference to the ease with which a project can be administered, but more trust is required. There should be valid reasons for any withdrawals being made. A cheque looks like this:



Whatever transactions take place, the bank teller will always keep a record of the amount deposited or withdrawn from the book.

4.3 Disciplinary Measures against defaulters

Each and every community has people who deviate from the norm. It does not matter how high the morale of the community may be, some always try to lead others astray. However, circumstances that may lead to taking disciplinary action against defaulters include:

- Uncooperative members of the community in contributing labour as well as the nominal amount of money agreed upon to cover capital costs of the scheme. Some people in rural villages believe in tangibles. Therefore, this category of people would remain suspicious and negative during the inception of the scheme. However, as soon as they start realizing the benefit of an improved water supply, they decide to join the scheme. In that case then, it is suggested that the Committee decide on an amount to be paid to cover the capital and manpower days employed during construction of the scheme as penalty. In order to be fair to community members who have always been cooperative, it is also suggested that the amount charged be slightly higher.

- Families who may contribute towards labour on an irregular basis without valid reasons or giving excuses. These people should be made to pay penalties, otherwise they will influence faithful workers to also become lazy.

- People who, due to regular employment, may be unable to physically assist with labour during construction, yet do not provide substitutes. The Committee should decide on an amount to be paid by these members. It is suggested that this money be used to either pay nominal fees to those working on the scheme or buy them some refreshments in order to boost their morale.

- People who default in payment of the running or recurrent costs of the scheme. It is suggested that the committee approach these people and pursuade them to pay, failing which these people could be, taken to the induna/tona, civic association/residents organization or the inkosi/Kgosi for disciplinary measures. Another mechanism may be to cut off their water supply and use social pressure to get them to pay. Whatever disciplinary measures are taken, is up to the Committee to decide.

- Vandalism of the scheme either by children or opposing factions within the community. The Committee should decide on disciplinary action to be taken against the culprits. Fines should definitely be imposed against anybody who damages or vandalizes the scheme intentionally.

  Alternatively, the committee could bring the opposing groups together and let them resolve the matter amicably.

5. OPERATION AND MAINTENANCE

Operation and maintenance are the most important elements for sustainable development of water supply schemes. Many water supply projects fail due to negligent of these aspects. It is therefore essential that schemes be always kept operational and properly maintained.

We will now turn to a brief discussion of the most crucial elements of operation and maintenance of constructed schemes as follows:

5.1 What needs to be operated and maintained?

- ***Equipment:*** All hardware such as pumps, filters, valves and pipes are subject to wear and tear and should be monitored and serviced before problems become serious. To ensure that this is done the Water Minder should observe a routine of regular daily, weekly and monthly checks. On a daily basis the pump and the disinfection apparatus will be checked. On a weekly basis the filter might be checked. On a monthly basis all valves in the system might be checked, and so on.
- ***Water quality:*** The quality of the water being supplied by the system should regularly be checked. Breakdowns in the working of filters or disinfection apparatus will be immediately apparent in the deterioration of the water quality.
- ***Water quantity:*** If there are complaints from any members of the community that insufficient water is reaching their waterpoint, then the cause of the problem should be found and rectified.
- ***Disposal of wastewater:*** Stagnant pools of wastewater accumulated around standposts is a serious health hazard and it is the Water Minder's job to ensure that drainage around standpipe's is maintained.

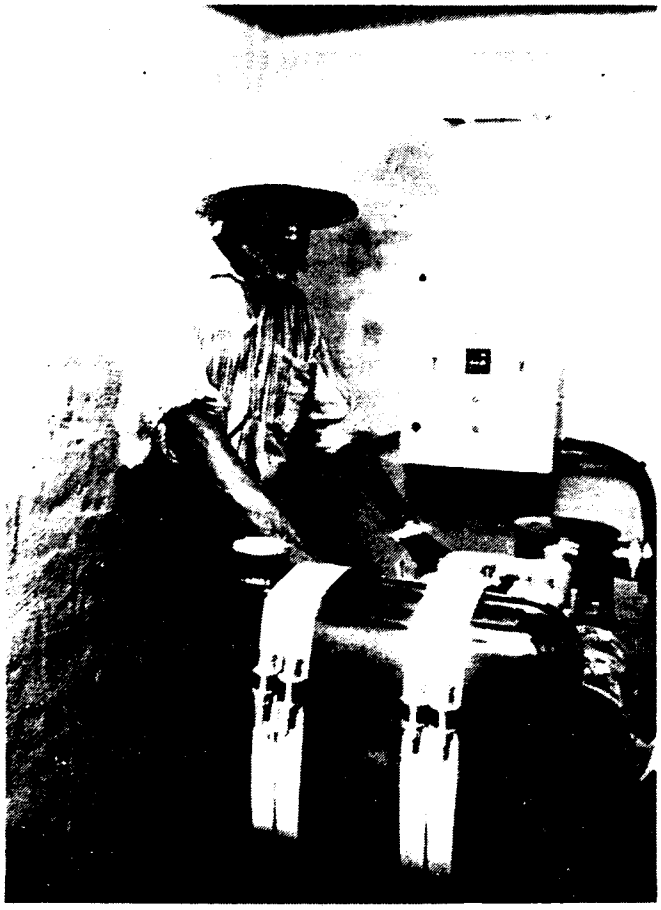
5.2 Who is responsible for operation and maintenance?

5.2.1 Water Minder

- It is important to have a reliable Water Minder to undertake the following tasks:
- Take care of the engine, oil it regularly, buy spare parts when necessary, and report to the Water Committee if there are serious problems.
- Report major faults to the Committee.
- The Water Minder must switch the engine on and off whenever water must be pumped, and check or inspect the condition of the machinery each time.
- Both the Committee and Water Minder must make necessary arrangements for someone to get money from the treasurer each month to purchase diesel for the engine.

It is very important that the committee arrange payment of the Water Minder. In fact, the Committee must draw up a contract with the Minder for his payment. Whatever amount is given to the minder it will encourage him to do his work better. Payment of the Water Minder should come from monthly payments towards operation and maintenance or running costs.

Another important aspect to consider is training of the Water Minder. This training can either be done on-site or he can be sent to an appropriate institution for training. Normally, only basic training on water treatment, operation and minor repairs of the engine is required.



WATER MINDER AT WORK

5.2.2 Water Committee

The Water Committee's functions in operation and maintenance are thus:

- Workout a strategy of paying the Water Minder's monthly wages.
- Check and supervise the Minder's work on a regular basis.
- Ensure that the community looks after the system and report breakdowns.
- Contact outside bodies for special technical assistance in case of the system's breakdown.

5.2.3 Community

As end-users, the community could also play an important role in the operation and maintenance of the scheme. For example, through the appointment of tap guardians, which may be members of households closest to the tap, faults and breakdowns can be promptly reported to the Water Minder/Committee. In so doing, the community members develop an increased sense of ownership, responsibility and pride in the scheme.

6. PARTICIPATORY HEALTH EDUCATION

To maximize the health benefits of improved water supply, the committee should ensure that health and hygiene education is undertaken in the community. This would enhance the community's understanding, awareness and appreciation of improved services. The committee could elicit the assistance of local health workers who have a sound track record in community health education. Health education should be directed at all levels of the community, particularly women.

GROUP DISCUSSION USING VISUALS

Efforts should be made to promote participatory education rather than the traditional academic one-way education. In other words, facilitators/educators should avoid a "telling" and adopt a "selling" approach. There is also great scope for what Chambers (1983:201) calls reversal learning of indigenous knowledge from the community. Likewise, the committee should sit, ask and listen to what the community knows about health. The need to curb environmental pollution and health hazards through proper sanitary facilities, washing slabs, cattle drinking troughs, proper drainage, protection of water and food, proper disposal of solid wastes and washing hands and facilities should be emphasized during the education campaigns. Water and health education flipchart is available on request.(Produced by Amatikulu Resource Centre).

Participatory education could include dramatic presentations, games, audio-visuals, group discussions and interpersonal communication. The CSIR has used this approach with great success in rural areas.

DRAMATIC PRESENTATION OF WATER RELATED DISEASES BY COMMUNITY

7. PUBLIC RELATIONS

Effective public relations is essential for sustainability of a water supply project. Basic requirements for public relations include:

- ***Accountability:*** The Committee should always be accountable to the community and outside bodies in order to maintain a good working relationship. For example, the Committee should report regularly about the financial circumstances and should let those interested in checking the financial situation of the project feel free to ask for the books. In this way, the people will develop trust and thus support the Committee wholeheartedly.
- ***Communication:*** It is also important for the Committee to maintain sound communication with the community and outside bodies such as the neighbouring community, funding organizations, technical support groups and the government. For example, the Committee should give regular feedback to the sponsors who may support their initiatives in future.
- ***Adherence to constitution:*** Efforts must be made to always adhere to the constitution, otherwise the Committee will lack direction.

8. CONCLUSIONS

To a great extent, past project failures could be attributed to the lack of community-based management of water supply schemes. It has been established over the past decade that appropriate technology and community participation alone cannot lead to sustainable projects. Through participatory training, the community could be empowered to achieve full management capacity. However, the external agency should avoid imposition of management systems and merely create an environment conducive for the community to run their own scheme.

9. ACKNOWLEDGEMENTS

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Special thanks are due to all the rural communities whom through all the years of working together have vitally contributed and enriched our experiences. To all these people we say ***"Keep it up, even tomorrow!"/"Swarang Bjalo, Le Ka Moso!"/"Ningalahli Nangomuso!"***.

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APPENDIX A

INFORMATION NEEDED

The Water Committee may elect to conduct a need assessment study in any suitable manner ranging from community meetings, in-depth interviews etc. Therefore, it is not necessary to formalize the study.

The range of data needed for water supply and sanitation programmes may include the following:

Bio-demographical information

- An understanding of village organizational structures and identification of disadvantaged groups.
- Family composition and size (e.g. nuclear or extended families). Establish how many adults and children there are in the family.

Water sources, usage and attitudes

- Available sources and purpose of use for each household (e.g. drinking, cooking, laundry, bathing, animals, home, garden).
- Quantity and quality
- Distance and time to fetch water
- Seasonal variations in water source
- Drawers of water (e.g. women, children)
- Preferred water sources for related activities (e.g. laundry, animal drinking, bathing).
- Perceptions of community needs
- Local beliefs and attitudes related to water sources.

Health aspects

- Morbidity and mortality rate (especially among children under the age of five)
- Existing water related/washed diseases.
- Major health problems in the country and seasonal variations.

Technological affordability and willingness to contribute

- Heads of households and major contributors to upkeep of families
- Means of subsistence or major occupations
- Preferred spending patterns and ability to contribute money
- Borrowing and savings customs
- Seasonal employment
- Payment for water.

Technological alternatives

- Local skills, capabilities and traditional alternatives
- Preferred technological improvements
- Availability of skilled and unskilled labour
- Local availability of materials for construction.

Excreta disposal and relationship between method and health

- Existing defecation practices (noting important differences between religions, men, woman, in-laws and children)
- Personal hygiene habits, cleansing materials and practices
- Important taboos, beliefs, related locations, sharing etc.

Community involvement and participation

- Community and family level leadership in decision-making
- Major local political or social factions which might affect participation
- Extent of interest and participation in water, sanitation and other development activities.
- Important characteristics that would determine acceptability and influence of outsiders working in the area
- Priority given to improvement of water supply and sanitation in relation to other priority needs in the community.

APPENDIX B

APPLICATION FOR SPONSORSHIP

1. **TITLE: NAME OF THE ORGANIZATION OR PROJECT**

2. **ADDRESS AND TELEPHONE NUMBER**

3. **BACKGROUND AND GENERAL MOTIVATION**
   - 3.1 Location of community
   - 3.2 How your organization or project started
   - 3.3 Reasons for its establishment
   - 3.4 Number of families who will benefit from the project
   - 3.5 Statistics of water related diseases in the area (if any)
   - 3.6 The type of water sources for drinking, distance to water sources and average time spent to collect water.

4. **SPECIFIC AIMS AND OBJECTIVES OF THE PROJECT (ENCLOSE/REFER TO THE CONSTITUTION IF AVAILABLE).**

5. **PROJECT PLAN**
   - 5.1 Intended commencement date and duration of the project
   - 5.2 Community's contribution (in-kind and/or money)
   - 5.3 Professional advice and administrative support agencies (External Agencies to support the project technically if any).
   - 5.4 Government support of the project (if any).

6. **BUDGET**

Break the amount of money needed into items, for example:

Ferrocement tanks	= R10 000
Pipes	= R15 000
Skilled labour	= R10 000
Cement and aggregates	= R10 000
Design and Project Management	= R15 000
TOTAL	**= R60 000**

7. **CONCLUSION**

N.B. A well written and detailed proposal often attracts substantial sponsorship for the project.

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APPENDIX F

FUNDING PROPOSAL FOR KWANYUSWA TRIBAL WARD
WATER SUPPLY FOR DOMESTIC USE

NOTE: THIS PROPOSAL WAS PREPARED BY THE KWANYUSWA WATER COMMITTEE. THEREFORE, THE RESEARCHER IS NOT RESPONSIBLE FOR ANY ERROR THEREIN.

FUNDING PROPOSAL FOR KWANYUSWA TRIBAL WARD WATER SUPPLY FOR DOMESTIC USE

by

KWANYUSWA WATER COMMITTEE

APRIL 1990

FUNDING PROPOSAL FOR KWANYUSWA TRIBAL WARD WATER SUPPLY FOR DOMESTIC USE

1. INTRODUCTION

KwaNyuswa Tribal Ward is part of Ndwedwe District in KwaZulu Homelands with a population of 313 families. It is a typical rural area with absolutely no pure water supply. Statistics collected from the local health services indicates a high incidence of water and sanitation related diseases. The number of confirmed cases from January 1990 to December 1990 are as follows:

1.1 MONTEBELLO HOSPITAL

Typhoid fever	0
Cholera	0
Scabies	152
Gastro enteritis	88
Bilharzia	10

1.2 APPELSBOSCH HOSPITAL

Typhoid fever	0
Cholera	0
Scabies	841
Gastro enteritis	424
Bilharzia	2

1.3 NDWEDWE SCHOOL HEALTH AND ENVIRONMENTAL HEALTH SERVICES

Typhoid fever	20
Cholera	0
Scabies	2884
Gastro enteritis	3559
Bilharzia	77

The above institution receive cases from KwaNyuswa Tribal Ward and other neighbouring areas within Ndwedwe District.

The geographical terrain of KwaNyuswa Tribal Ward is very poor. People have to go down the valley to collect water from springs which are about 700 meters away from their houses. Despite the distance involved these springs are also polluted because of poor hygiene practices as well as the absence of toilet facilities. This alone has led to the high incidence of water and sanitation related diseases in the area.

To quote the declaration of the International Drinking Water Supply and Sanitation Decade (IDWSSD) "Every person should have access to at least 50 litres of water per person per day." When looking or examining the situation of the KwaNyuswa Tribal Ward and the declaration of the IDWSSD, one concludes that water supply to the area is not accessible to the people.

The 1989 CSIR survey indicated that the per capita daily water consumption in the neighbouring KwaHlophe ward varies from 12 litres in winter to 13 litres in summer. This should be seen against the WHO minimum recommended daily water use of 50 litres per capita. Although water is plentiful in the project area the very steep valleys restrict its availability. It emanated in that survey that the average family was spending nearly two hours daily collecting their water. The average distance that is walked to get to the water source is about 400 meters which is not so much further from the WHO recommended maximum distance of 250 meters, but the steep valleys double the haulage time. Though the above quoted figures pertains to KwaHlophe ward they can also be safely used at KwaNyuswa because geographically KwaNyuswa and KwaHlophe is one and the same thing.

The improvement of water and sanitation to the area will contribute to the objective of WHO which is "Health for all by the year 2000." Seeing that improvement of water and sanitation is the component of Primary Health Care, an attempt to improve water supply and sanitation will help in primary prevention of water borne diseases.

A pilot study of the adjacent KwaHlophe Tribal Ward was carried out by the CSIR and Umgeni Water in 1989 because the KwaHlophe had the same water problems as the KwaNyuswa Tribal Ward. Before even the project at KwaHlophe came to completion the community at KwaNyuswa was highly motivated. Immediately the water committee was formed and a delegation was sent to the local health authority to seek advice in this respect. At this juncture the community had collected R2 000 towards the implementation of a similar project. Through this committee, CSIR was contacted to help in designing and researching the possibility of improving water resources in KwaNyuswa as well as the cost that might be involved in such a project.

When looking at the amount the community has collected, it seems that individual members are appreciating that they have to pay for the convenience of improving their water supply. The community see improvement of water supply as a stepping stone towards community development.

The success of this project can lead to the fulfilment of other secondary objectives like development of farming in the area, establishment of small industries and drawing in of electricity from the nearby Ndwedwe Village.

Having received the options for the development of water supply in this area, it came out that at present the local community will not be able to raise enough

funds through community contributions to fund capital cost of this project.

It is therefore the aim of this proposal to highlight to those who can afford to fund this project or to render substantial financial assistance towards initiation and implementation of this project. Maintenance, however, will rest upon the community as time goes on.

2. PROJECT PLAN

2.1 Pending availability of funds, the KwaNyuswa community intends starting this project in June 1991. The following organisations and authorities will be involved in the actual implementation of the project:

2.1.1 KwaNyuswa Water committee and the community at large provision of manpower and administration of finance.

2.1.2 Ndwedwe Community Services Forum for liaison in respect of Community Development.

2.1.3 CSIR for consultation, technical and professional advice.

2.1.4 Assistance from KwaZulu Government Departments if possible.

2.2 For detailed information and actual implementation and funding I would refer to the enclosed CSIR feasibility study page 7 for upgrading of the water supply of KwaNyuswa Ward, Ndwedwe District, KwaZulu. Please note that the cost detailed in the CSIR study exclude consulting fees which be R5 000 for option 3.1 and R1 500 for option 3.2.

2.3 It is also worth mentioning however, that the community at it's meeting resolved and opted for option 3.2 on page 8 of the report.

3. CONCLUSION

When looking at the alternative means of improving the water supply and sanitation of the area, it is noted that the high incidence of water and sanitation related diseases can be solved. The health of the population of KwaNyuswa can be improved and upgraded because of other developments that can follow after the improvement of water. The accessibility of water can change the financial status of the people because funds that are used for the paying of health services can be utilised and used in other needs of the community. Primary prevention of the diseases can contribute to the attainment of the objective/goal of the WHO which is "HEALTH FOR ALL BY THE YEAR 2000".

SECRETARY: KWANYUSWA WATER COMMITTEE