

## CHAPTER ONE

### RESEARCH GOALS AND METHOD

#### 1.1 INTRODUCTION

“It is vital that all parties involved in efforts to improve community water supply – government agencies, donors, advisors, community leaders, and residents – recognize and adhere to the principle that *it is the local people themselves, not those trying to help them, who have the most important role. The community itself must be the primary decision maker, the primary investor, the primary maintainer, the primary organizer, and the primary overseer*”

(Briscoe and De Ferranti 1988:1)(researcher’s emphasis).

This sentiment is echoed by the South African Government’s policies established after 1994:

“The need for development to be a people driven process is fundamental. There is wide international experience that confirms the view that the provision of services in poor communities will fail if the people themselves are not directly involved. The policy is designed to ensure that the local community controls the process [of developing basic water services] through existing Local Authorities...”

(Department of Water Affairs and Forestry, 1994:6,29).

The concept of community participation in water development projects in rural areas is new in South Africa and the introduction of the concept is part of the current political transition process in the country.

Therefore, for water supply development projects to be successful in South African rural areas, it is of paramount importance to gain sufficient knowledge of the nature of current water supply in rural areas, the influence thereof on rural people’s lives, the nature of

future water supply development projects and the possible influence thereof on the lives of the rural communities concerned.

## **1.2 RESEARCH GOALS**

The primary goal of this study is to give an account of the current realities of a selected South African rural settlement in terms of its present and future water supply in order to determine what the best scenario for water service development will be for this particular settlement.

In order to achieve this primary goal, the following research goals were set:

- to determine the role of local government councils in water provision in rural areas, thereby determining the importance of the local residents' co-operation in their own water development projects;
- to give an account of the residents' water utilisation practices, thereby outlining the daily routine formed around tasks focused on water utilisation;
- to understand how current water supply influences the quality of life of the people living in the study area and what the effect of improved water supply will be on their future quality of life; and
- to determine the residents' value judgements concerning water as a natural resource and water supply as a service.

## **1.3 THE RESEARCH AREA**

For the purposes of analysing a rural settlement in terms of the research goals, the settlement of Makoko within the Mdluli Tribal Area of the Nsikazi district in Mpumalanga was chosen (see Map 2 and Map 3). The Phameni settlement in the Gutswa Tribal Authority area in Mpumalanga was used as a control group.

Makoko is situated in the Lowveld of Mpumalanga to the south of Hazyview approximately at longitude 31°14' east and latitude 25°13' south. The northern and eastern boundaries of the Makoko settlement are formed by the Kaapmuiden-Phalaborwa railway line, which separates the settlement from the western boundary of the Kruger National Park. The southern boundary of the Makoko settlement is a gravel road that leads to the settlement of Malekutu, situated  $\pm$  5 km south of Makoko. Makoko is divided into three zones, called Makoko A, Makoko B and Makoko C.

Makoko is situated in a sub-tropical climatic zone with an average rainfall of 650 to 700 mm per annum. Rainfall occurs primarily during the summer months. A non-perennial river, the Nsikazi River, lies about 2 km north of Makoko. The residents of Makoko have access to groundwater by means of one hand pump and two diesel pumps located within the settlement (see Section 3.2.3 for more detail). The residents also receive water from the Sabi River by means of a bulk water reticulation system (see Section 3.2.1 for more detail).

The settlement of Phameni, which forms part of the Gutswa Tribal Authority Area, is located about 3 km northwest from Makoko and was used for control purposes to test research findings (see Chapter Three). The aim was to compare the findings on water utilisation practices among the residents of Makoko with the practices of the residents of Phameni. Therefore, Chapter Three discusses details on the residents of both Makoko and Phameni, while Chapters Two and Four refer mainly to detail on Makoko's residents only. The residents of the two settlements share the same culture (see Section 2.3) and horticultural practices<sup>1</sup>. The water supply status of both settlements is very similar. The only differences between the two settlements are that they fall under the jurisdiction of two different Swazi chiefs (*tikhulu*) (see Section 2.3) and that Phameni's population is smaller than that of Makoko. Phameni has a population of approximately 2 200 and

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<sup>1</sup> The term "horticulture" is used instead of "agriculture" when referring to the practice of vegetable cultivation of the residents of Makoko and Phameni because of the small yield.

Makoko one of approximately 5 600 (Makoko Needs Assessment 1996:2; Phameni Needs Assessment 1996:2).

## **1.4 THEORETICAL DEFINITION OF THE RESEARCH THEME**

### **1.4.1 Water as a natural resource**

According to Rautenbach (1973:137), renewable natural resources include fauna, flora, air, soil and water. The term “renewable natural resources” refers to resources that can be renewed by nature. These resources stand in contrast to resources such as minerals and oil that, once used by man, cannot be renewed (Fuggle 1992:2-3).

Despite nature's ability to replenish the earth's water supply, water is scarce and valuable in South Africa in general but also in the research area in particular. According to the South African government's *White Paper on Water Supply and Sanitation* (Department of Water Affairs and Forestry 1994:34-35), South Africa is a semi-arid country with limited water resources and with an average annual rainfall of 500 mm, which is only 60 % of the average rainfall across the world. The average annual potential evaporation in South Africa is between 1 100 mm and 3 000mm. Due to high evaporation losses from dams in South Africa, only 62% of the average annual runoff can be used cost-effectively with present technology (Department of Water Affairs and Forestry 1994:34-35)

Due to the dwindling of surface water resources in South Africa, groundwater is becoming a more important water source in the country (Department of Water Affairs and Forestry 1994:34). However, only 5 400 million m<sup>3</sup> of water per annum is obtained from underground water sources. A problem hampering the use of groundwater is the uncertainty of its location versus its potentially continuous supply from boreholes. This is mainly due to insufficient knowledge about the characteristics of groundwater sources. Consequently, the Department of Water Affairs and Forestry (DWAF) has embarked on a groundwater characterisation and mapping programme for the whole country (Department of Water Affairs and Forestry 1994:34) which is still underway.

The potential for the use of groundwater in the Nsikazi district, where the research for this study was conducted, is low. The geology of the area causes groundwater to be a poor source for continuous water utilisation (Development Bank of Southern Africa 1985:9-10). Furthermore, only two rivers in the Nsikazi District where Makoko and Phameni are located are perennial, namely the Crocodile and the Sabi Rivers (Development Bank of Southern Africa 1985:9-10).

#### **1.4.2 Sustainable utilisation and development**

It is obvious that *sustainable* utilisation of water in South Africa is vital. According to Makombe (1993:12) sustainable utilisation means that the resource must be utilised in such a manner as to grant the resource optimum time to renew itself through a natural process, to the level where it can support a healthy ecosystem. To achieve sustainable utilisation, sustainable development must be practised. According to Allen (1980:24), sustainable development is “development that is likely to achieve lasting satisfaction of human needs and improvement of the quality of human life”. The concepts sustainable utilisation and sustainable development will be discussed in later sections of the study.

#### **1.4.3 Water supply development: community involvement**

The need for the development of a sustainable water supply in the researched settlements once again emphasises the concept of sustainable development. Development focused on sustainable utilisation of water entails, amongst other things, the long-term successful usage and maintenance of water supply facilities.

Briscoe and De Ferranti (1988:9) outline the different roles that consumers and governments play in water supply development:

- Consumers must decide on the improvements to be made.
- Consumers must pay most of the cost of the chosen services.
- Consumers must take responsibility for maintaining the facilities they have chosen.

- Governments and external agencies must establish the environment in which communities can construct, operate and manage improved water facilities.

These four guidelines for the successful development of a water supply infrastructure were arrived at through experience gained from water supply development projects undertaken in African countries such as Kenya, Tanzania and Malawi (Briscoe and De Ferranti 1988:9).

In **Kenya**, a government-centred, top-down strategy for the development of a water supply infrastructure proved to be unsuccessful (Briscoe and De Ferranti 1988:9). In the 1960's, the Kenyan government designed and constructed new water supply infrastructure for rural settlements. All the costs of the construction and maintenance of the new infrastructure were met from central government funds, in other words, from "outside the settlements". There was little or no community involvement during the planning, construction and later maintenance of the water facilities. The only role that the residents of the settlements had to play was to receive and utilise the water. The infrastructure for the water supply could, however, not be adequately maintained, due to the unsubstantial nature of the subsidies. Subsequently, the new water facilities soon stopped operating (Briscoe and De Ferranti 1988:9).

A community-based strategy for the provision of water and the construction of a delivery infrastructure, also in Kenya, proved more successful. Government policies which made land available to small farmers and guaranteed high prices for cash crops resulted in steady incomes in rural households. The Kenyan government furthermore encouraged the activities of private groups in community development projects. As a result of these government policies encouraging community participation in development, the residents of the rural settlements concerned developed their own water schemes and infrastructure, which they improved over time and which resulted in a more reliable rural water supply in those areas of Kenya where the programme was implemented (Briscoe and De Ferranti 1988:9).

In **Tanzania**, a government-centred approach also failed when the government agencies responsible failed to deliver the financial and technical support they were supposed to provide for the maintenance and operation of water supply facilities. Unlike in Kenya, no community-based systems developed when government-centred water development projects failed. Reasons for this include the fact that Tanzania's government policies did not support private sector initiatives to develop such infrastructure, as the government policies of Kenya did (Briscoe and De Ferranti 1988:9).

In the case of **Malawi**, government policies established after independence dictated that rural communities would develop primarily by means of self-help activities, supplemented by technical support and training from government departments where necessary. Malawi's Department of Community Development involved the relevant settlements' residents in the planning, construction and operation and maintenance of water supply systems. The result was highly successful water supply schemes, owned, built and maintained by the residents of the settlements concerned, providing them with a reliable water supply (Briscoe and De Ferranti 1988:9).

Against the background of these examples from other African countries, it becomes important to ask why it seems necessary for South African rural communities to take responsibility for the initial construction and continuous maintenance of their own water supply, given that this is not the case with city dwellers. Answers to this question can be found in different aspects of water supply.

First, National Governments are responsible for the overall water supply in their countries, for the development of water facilities and for ensuring that there is adequate water for all citizens (Department of Water Affairs and Forestry 1994:2). However, it is not the National Government's responsibility to manage local water supply systems but that of Local Government (Department of Water Affairs and Forestry 1994:7-9).

Second, in rural areas the tax base that can be created is inadequate and local authorities therefore experience great difficulty in installing and maintaining water supply systems (Department of Constitutional Development 1998: 26, 61).

The development and maintenance of water supply systems in rural areas all over the so-called developing world therefore focus on community participation in construction and maintenance because national and local government simply do not have adequate finances to take responsibility for such services. The same principle also applies in South Africa (Department of Water Affairs and Forestry 1994:7).

#### 1.4.4 Quality of life

The issue of the improvement of the quality of life of rural people in the developing countries of the world has become increasingly multi-dimensional over the past few decades.

Atte (1983:26) states that “the growing urban problems due to rural-urban migration and the threat it poses to various power groups, rather than any major concern for the rural dwellers, are the cause of the present stampede to develop rural areas”.

From this conviction stemmed the economic growth approach and the modernisation approach aimed at improving the quality of life of rural populations in developing countries. The **economic growth approach** has failed in its aim because, in spite of tremendous growth in the GNP of some developing countries, the life of rural people has not changed and indeed has generally deteriorated (Atte 1983:29).

To address the repercussions of the failure of the economic growth approach, the so-called **modernisation approach** was developed (Atte 1983:29). Modernisation in this context refers to a process of social change in which development is the economic component. This implies that modernisation “produces the societal environment in which rising output per head is effectively incorporated” (Atte 1983:29).

Developing countries which embraced the modernisation approach concentrated on building schools, health centres and better housing because “being modern meant to endeavour to consume goods and services of the type manufactured in advanced [sic] industrial countries” (Mabogunje 1980:39). Thus, modernisation has created new needs



and desires among the people exposed to it. The consumption of “modern” goods and services has created considerable disaffection with so-called traditional conditions in rural areas (Mabogunje 1980:39). The modernisation approach to improve the quality of life of rural people consequently succeeded only in intensifying rural-urban migration with increased impoverishment to those left behind in the rural areas (Mabogunje 1980:39).

Atte (1983:30) ascribes the failure of both the economic growth approach and the modernisation approach to the problem of defining quality of life. Attempts to define the concept “quality of life” raise questions about what the standard is by which current living conditions in rural areas are measured, and what level of quality is found “acceptable”. The question is also who decides on this standard – the planner or the people planned for; and at what point quality of life is perceived to be satisfactory (Atte 1983:30).

Due to the problem of defining quality of life, early attempts to improve quality of life followed a colonial schema, called the *etic* approach to enhancing quality of life (Atte 1983:30). In colonial times, colonialists compared living conditions in colonial territories with those of their home countries and concluded that the living conditions of various colonies’ indigenous populations were “inferior”. These colonialists also concluded that this “inferiority” was due to a perceived educational, religious and technological “underdevelopment”. Attempts to improve living conditions therefore focused on raising the living conditions of the indigenous populations to “acceptable levels” and thus to a standard of a better quality of life. Atte (1983:30) further states that most planners in developing countries assimilated such neo-colonialist schemes (economic growth and modernisation approaches) in their development approaches.

Fortunately, in recent times, more successful approaches to improve the quality of life of rural people have been developed. One of these approaches is the basic needs approach. The basic needs approach is supported by the World Bank and it seeks to meet the basic needs of the entire population of a developing country (Atte 1983:30).

This concept of basic needs entails (Streeten and Burki 1978):

- basic consumption goods – food, clothing and shelter – to which everyone is entitled;
- basic services – such as education, health services, clean water supply – to which everyone should have access; and
- the right to participate in making and implementing decisions which affect one’s own development.

Atte (1983:31) adds to the above criteria the provision of productive employment as a means of income, which can be used to purchase basic goods and services, while Ghai *et al.* (1977:12) state that the main principle of the basic needs approach is the recognition that each human being, simply because of his/her existence “has inalienable human rights regarding the satisfaction of basic needs”.

Atte (1983:31) recognises the fact that people from different geographical regions and different cultures have different basic needs to sustain life. Therefore, in order to make the basic needs approach more holistic in nature, three levels of basic needs are proposed which must be met for the approach to be successfully implemented (Atte 1983:31):

- basic survival – having enough to survive;
- continued survival – having the required minimum of food and water; protection from fatal diseases, and adequate shelter; and
- productive survival – having more food, better shelter, and other social services backed by an adequate income.

Atte (1983:31) subsequently promotes an *emic* approach through which rural people can propose their own basic goods and services designed to satisfy their own yearnings. The *emic* approach thus represents a participatory approach, whereby those concerned aid government in defining the current quality of life in rural areas as the rural people perceive it and jointly build a “standard” which will benefit such rural people. According to Atte (1983:32), such an approach is the most successful due to the existence of what he refers to as “a rural ideology”. A rural ideology entails the way of life that a given rural population has built up over time. Consequently, the rural people themselves are in the best position to say whether they are satisfied with their perceived quality of life or not.

Therefore rural people's perception of the enhancement of their quality of life must be the nexus of all development projects, because it is only when their desires are effectively met that they will be satisfied (Atte 1983:32). The desired quality of life results from past experiences and current awareness levels of individuals or specific groups of people (Atte 1983:32).

These above-mentioned approaches to determine quality of life of rural people makes it clear that for the purposes of determining the quality of life of the residents of Makoko and of applying this to development approaches, it is necessary to elicit the residents' own rendition of what quality of life entails for them.

#### **1.4.5 Value judgements**

According to Coertze (1980:45), a system of value judgements in a particular culture is established over generations and is conveyed to succeeding generations by means of the process of enculturation. Coertze (1980:45) classifies values in four categories:

- logical values (*logos*) – the factual and logical evaluation of all phenomena in the reality that is relevant to life;
- moral or ethical values (*ethos*) – the good or bad, right or wrong of actions;
- aesthetic values (*aisthesis*) – that which appeals to emotion, appreciation, adoration and satisfaction; and
- pragmatic values (pragmatism) – the evaluation of the usefulness of phenomena with a blissful existence in mind.

Coertze (1980:46) also states that values are culture-specific, since no-one is a fulfilled person outside the context of his/her culture and it is the values of a particular cultural group that form a foundation and link between the different aspects of that particular culture.

The four categories of values originate from a cultural subjective judgement on the truth of reality and are interpreted in terms of an accumulated knowledge system that over generations becomes part of a particular way of life (Coertze 1980:45). This means that the actions of each member of a specific cultural group must be acceptable in terms of the system of values of the whole cultural group.

According to Kriel (1992:14) and to Kearney (1984:41-106), the similarity between the values of members of a cultural group stems from a shared world view, which in turn is the background against which values of reality are formulated. It is also important to point out that different cultures that are related to each other, for example, the south-eastern Bantu cultures, can often share a similar value judgement about a given reality (Coertze 1980:98-99).

Mbiti (1969:108) best describes the general Afro-centric value placed on the family unit when he states: "Whatever happens to the individual happens to the group, and whatever happens to the whole group happens to the individual. The individual can only say: 'I am, because we are; and since we are, therefore I am.'" Macnamara (1980:20), Oruka (1987:24, 57-57) and Landro (1989:136-137) use similar descriptions.

According to Kriel (1992:16), the world view, and therefore also the values of any given culture, changes with extreme difficulty and seldom entails more than just a shift in emphasis because value judgements are the directing and integrating driving force behind the thoughts and actions of people from different cultures.

## **1.5 RESEARCH METHODOLOGY**

The research for this study and the finalising of the study were completed in two years (1997 to 1999). The research included a literature study on the topic as well as quantitative and qualitative field research done within the two research settlements, Makoko and Phameni. Altogether, the quantitative and qualitative field research was done in 18 weeks in periods varying from one week to eight weeks at a time. The quantitative field research entailed the completion of structured questionnaires by a

representative sample of the residents of the Makoko and Phameni settlements. The qualitative research entailed the researcher having interviews with chosen spokespersons.

The research process was undertaken in terms of Coertze's (1978:10) suggestions. It entailed the following processes:

- formulating the proposal;
- designing the research methodology; and
- practising specific research techniques (quantitative and/or qualitative research).

The difference between quantitative and qualitative research was understood in terms of the exposition by Mouton and Marais (1989:157), who state:

“... die *kwantitatiewe benadering* [kan] breedweg beskryf word as daardie benadering in geesteswetenskaplike navorsing wat meer geformaliseerd, sowel as eksplisiet gekontroleerd is [byvoorbeeld statistiese opnames], met 'n reikwydte wat meer presies afgebaken is en relatief na aan die natuurwetenskappe se benadering geleë is. Hierteenoor is die *kwalitiewe benaderings* daardie benaderings waar van die prosedures nie so streng geformaliseer en geëkspliseer is nie, terwyl die reikwydte meer grensloos is en op 'n meer filosofiese wyse te werk gegaan word”

“ the quantitative approach [can] be broadly described as that approach in research in the human sciences that is more formalised, as well as explicitly controlled [for example statistical surveys], with a scope that is more precisely delimited and is relatively close to the approach of the natural sciences. By contrast, qualitative approaches are approaches where some of the procedures are not so strictly formalised and explicated, while the scope is less limited and a more philosophical approach is followed.”

(Mouton and Marais 1989:157) (italics in original).

Coertze's (1978:18-19) instructions in terms of the technique and procedures involved in in-depth interviews were also followed. The techniques and procedures for quantitative research (a statistical survey based on the drawing and completion of questionnaires), as set out by Mitchell (1980), Casley and Lury (1987), Schnetler (1989), Stoker (1989), Mouton and Marais (1989) and Schlemmer (1990) were followed as far as possible.

According to Mouton and Marais (1989:196), the quality of the research findings is directly dependent on the justifiability of the research method followed. Consequently, details on the water utilisation patterns and residents' value judgements on the issues under investigation are described in the chapters of this study as these patterns and value judgements were conveyed to the researcher by spokespersons based on their own perspectives and cultural background as well as within the confines of their value judgements as shaped by their realities. This method of conducting research and of giving an account of the research findings is known as the *emic* approach (Kottak 1987:30).

According to Howard and Dunaif-Hattis (1992:4), the *emic* approach is the best method for conveying people's value judgements on the environment in which they live and the practices involved in their everyday life as formed by the natural environment. Therefore, all statements by spokespersons reflected in this study originate from their own knowledge and insights. However, the researcher accepts responsibility for the presentation of all the facts mentioned and the conclusions arrived at in this study.

### **1.5.1 Literature study**

The first goal of this study was to gain information on the history of the Mdluli people living in the Mdluli tribal area in the Nsikazi district. A book by Van Warmelo (1935), *A Preliminary Survey of the Bantu Tribes of South Africa*, was the main source used to determine the ethnic history of the Mdluli people. A report by Van der Merwe, *Preliminary Ethnological Report* (Van der Merwe 1992) verifies the older information of

Van Warmelo (1935) about the ethnic history of the Mdluli people through interviews with Mdluli spokespersons.

A book by Mabuza (1983), *KaNgwane: The Road Ahead*, proved very useful in explaining the history of Swazi people's residence in South Africa and their relation to Swaziland.

The topic of this study also necessitated research on the role and functions of local government institutions in water supply and water supply development. This included research on the water utilisation practices of this specific cultural group as well as on these people's value judgements regarding water as a natural resource and water supply as a service. Finally, this study involved research on the residents' perception of their quality of life as influenced by the status of their water supply.

For information on the role and function of local government institutions in water supply to rural areas, official South African government documentation proved to be the most useful. All government White Papers quoted in this study were published after the general election of 1994 and therefore represent the policy of the current government. However, it is possible that there were policy changes made after the period in which this study was done.

The *White Paper on Water Supply and Sanitation* (Department of Water Affairs and Forestry 1994) compiled by the Department of Water Affairs and Forestry (DWAF) proved very useful in discovering the policy of the current government regarding basic water supply to the rural population of South Africa. The White Paper contains the Reconstruction and Development Programme's (RDP) minimum standard requirements for water supply that every South African citizen is entitled to (see Section 2.9.6). This White Paper furthermore emphasises the government's policy that the development of water supply infrastructure is to be a people-driven process, and outlines the institutional framework proposed for developing and maintaining such services (see Section 2.9).

When the researcher started with this study, DWAF officials stated that the *White Paper on Water Supply and Sanitation* of 1994 is the correct source of information on the government's policy regarding water supply. During the course of the study, the *Water Services Act* (Republic of South Africa 1997) and the *National Water Act* (Republic of South Africa 1998) was published. For the sake of completeness, references to the *Water Services Act* (Republic of South Africa 1997) and the *National Water Act* (Republic of South Africa 1998) are included in the text where relevant.

The *White Paper on Local Government* (Department of Constitutional Development 1998), compiled by the Ministry for Provincial Affairs and Constitutional Development, was a good source of information on the functions of local government systems during development projects of any kind within rural settlements under their control. The *White Paper on Local Government* (Department of Constitutional Development 1998) specifies each local government body's role and function as well as the manner in which these bodies should interact with one another during development projects in rural settlements under their control.

Older literature on the Swazi culture contains descriptions of traditional customs that are no longer practised due to changed living conditions in modern times. The books by Kuper (1963), *The Swazi: A South African Kingdom*, and by Marwick (1966), *The Swazi: An Ethnographic Account of the Natives of the Swaziland Protectorate*, on the cultural practices of the Swazi, contain very little reference to water utilisation practices. Consequently, alternative sources were sought. The Water Research Commission reports by Van Schalkwyk (1996) and Sami and Murray (1998) are detailed accounts of the particular water utilisation practices of residents in rural settlements. The reports provided valuable information with which the practices of the residents of the research settlements could be compared.

Unfortunately, the detail cited in the report by Van Schalkwyk (1996) does not discern between the cultures of the rural people referred to but instead uses the concept "standard of living conditions". The latter term includes the standard of housing and level of



income. Consequently, the researcher compared the research settlements' residents' water utilisation practices with those of rural people referred to in the report with a similar "standard of living conditions" within the context in which this term is understood and explained in the report by Van Schalkwyk (1996).

The literature available on the concept "quality of life" suggests that the concept has been much more extensively studied within the field of Sociology than within the field of Anthropology. The article by Smedley (1979a) "The assessment of quality of life" and the books by Smedley (1979b) entitled *The concept "quality of life" and its implications for housing research* and by Möller (1992) *Quality of Life in unemployment: a survey evaluation of black township dwellers*, are works within the field of Sociology used in this research, firstly, to understand the academic definition of the concept and, secondly, as a guide for the qualitative research done amongst the residents of Makoko on the subject.

Literature on the quality of life within the field of Anthropology that proved useful for this study were especially the articles by Jonas (1983), "Lewensgehalte – 'n moontlike volkekundige benadering", and Jacobs and Pauw (1995) "Lewensgehalte van 'n landelike gemeenskap". These works emphasise the importance of culture when one measures the quality of life of a given group of people, unlike the Sociological literature, which only includes culture to a lesser extent or does not include the concept at all.

With regard to the value judgement system of the Mdluli people, Coertze's (1980) book, *Filosofiese en metodologiese grondslae van die Volkekunde*, provides information on different categories of values. Kearney's (1984) book, *World View* discusses the links between the concepts "world view" and values. De Beer (1994) in "Benutting van hernubare hulpbronne: persepsies van swartes in die noordstreek van Suid-Afrika" outlines the cosmological perceptions of sub-Saharan African cultures, which enhanced understanding of the values the Mdluli people hold with regard to water as a natural resource.

The water utilisation practices of the Mdluli was compared to the findings of Els (1996) *Die benutting van hernubare natuurlike hulpbronne by die Vanhlanganu-Mnisi van die Mhaladistrik* where he describes the water utilisation practices among the Vanhlanganu-Mnisi. However, it was clear that the research themes, namely the role and function of local government institutions, water supply, water utilisation practices and, to a lesser degree, quality of life, are not themes commonly dealt with in Anthropology. Consequently, the researcher was forced to use literature from Sociology, Law and Engineering, all based on a Western point of view. Although these works could add valuable information, the evaluations made in these works could not always be used as guidelines for evaluations in this study's research results, because the authors of these works did not consider the culture and value judgement systems of the specific groups of people they focused on to be important research aspects.

Hence, the researcher was, to a great extent, dependent on the evaluations made by the residents of the research settlements and other (specialist) spokespersons from outside the research settlements about what they considered to be fact in respect of water utilisation and the study of the quality of life of these residents.

### **1.5.2 Qualitative research**

The researcher's introduction into the research area was achieved via the Lubambiswano Forum. The Forum was established in 1993 with the purpose of facilitating communication between representatives from the Kruger National Park and the rural settlements in the northern Nsikazi district on the border of the Park. Issues discussed at Forum meetings include the problem of animals such as lions, elephants and hyenas breaking through the Park's fences and destroying the rural people's crops and killing their cattle. The Lubambiswano Forum also organises training courses for local rural farmers' associations and women's clubs.

At the first meeting of the Lubambiswano Forum the researcher attended in September 1997, the goal and purpose of the research was explained (namely to learn about a rural

settlements' current water supply status, how the residents utilise water and how their water supply affects their daily lives) and the members of the Forum were asked to nominate a rural settlement from their area which they thought would be suitable for the research. The Forum members nominated the settlement of Makoko. A member of the Forum, Mrs Dina Phiri, was initially appointed by the Forum to accompany the researcher on visits to Makoko and to serve as an interpreter.

The first task was to meet the late *Sikhulu* (chief) MZ Mdluli, who resided in Makoko and to ask his permission to undertake the research in his tribal area. Due to the late *sikhulu's* tight schedule, a meeting could not be arranged immediately. The *sikhulu's* secretary, Fankie Mashaba, subsequently undertook to inform the *sikhulu* of the researcher's presence in the settlement and of the reason for the research. He also obtained the *sikhulu's* permission for the research to continue. The first meeting that could be arranged with *Sikhulu* Mdluli took place one month after the research had already been started.

After the first few weeks of research, it became clear that Mrs Phiri's own commitments made it impossible for her to continue to be the researcher's guide and interpreter. The fact that she lived in Kabokweni, a settlement about 30 minutes' drive from Makoko, also made it difficult for her to join the researcher on a daily basis. Consequently, a new guide/interpreter had to be found.

The best option was to find a guide from Makoko, firstly, because it would solve the problem of travelling and, secondly, because a local person would know the area and the people. During the weeks with Mrs Phiri, the researcher had realised that the research was not going according to plan, as Mrs Phiri was a stranger in Makoko, which made access to spokespersons difficult.

In order to find a new guide, the help of the *sikhulu's* secretary was again sought. It was explained that it would be preferable for the new guide to be female, as the researcher is female and it is mainly women who are involved in the daily chore of fetching water. The guide would have to be able to speak Afrikaans or English and have some knowledge

of the research subject. The secretary introduced three local women, of whom only one could speak good English. Fortunately, this lady, Lindiwe Fankomo, was prepared to assist the researcher and soon became a very trusted guide, interpreter and spokesperson. Lindiwe's friendly and inquisitive nature helped to make the research both thorough and pleasant.

The research started by focusing on learning about the current status of the water supply in Makoko. The first few days were spent driving through the settlement with the guide to ascertain where the boreholes, communal taps and natural water sources were. The working of the hand pumps, diesel pumps and communal taps was checked on and water was tasted at all the different water points. Local residents were asked about the reliability of the water sources and which water source was favoured most and why. The researcher found that private connections to the existing water supply line existed. Hence, residents were questioned on their reasons for installing private connections, the costs involved and the reliability of these sources.

All this preliminary work was done with the intention of becoming acquainted with the settlement and its residents and learning about the water supply of the settlement. It was important to become familiar with the research area and its residents, as it soon became clear that the research could only really get underway once the local people were comfortable with the researcher's presence.

Observation played an important role in this first phase of the research and indeed throughout the entire research process. Observation during trips through and outside the settlement and during visits to residents' stands led to questions previously not thought of. Such information provided deeper insight into the subject studied and led to further knowledge on the topic. It was therefore important to take short notes and ask questions either immediately or, if this was not possible, at a later stage. Notes were taken meticulously during every day spent in the field. During casual interviews with spokespersons, brief notes were jotted down so as to not disturb the course of the conversation. At the end of each day, the notes were then reviewed and a detailed

account was written down of the information gained. It was important to review the events of each day in order to follow up on gaps in, or uncertainties regarding information on the following day. Evaluations and deductions made by the researcher during interviews were at all times verified with spokespersons.

The qualitative research was done according to a research schedule. The different research themes were categorised and the research process was undertaken according to these categories. Each day was planned the evening before and the questions were devised to ensure that all the relevant aspects of the specific issue were covered. Appointments with spokespersons were made in advance, specifying a time and a location. Spokespersons interviewed during the course of the research were the following:

- Male and female spokespersons were selected from the research settlements. Mainly female spokespersons were used in researching water utilisation practices and reliability of water sources. Male and female spokespersons (including spokespersons from the Project Steering Committee of Makoko) were interviewed in researching the remaining research themes (56 spokespersons fall into this category).
- Spokespersons from the Indigenous Authority structure in the area (including the late *Sikhulu Mdluli*, *tindvuna* and the *sikhulu's* senior secretary) were interviewed (five spokespersons fall into this category).
- Spokespersons from the Department of Water Affairs and Forestry were interviewed at the Department's offices in Nelspruit and Malekutu (five spokespersons fall into this category).
- Spokespersons from the Lowveld and Escarpment District Council and the Nsikazi Representative Council were interviewed (seven spokespersons fall into this category).
- Spokespersons from private engineering firms in Nelspruit who are involved in the construction of water supply infrastructure in the northern Nsikazi district were also interviewed (six spokespersons fall into this category).

During the interviews, care was taken to ensure that each interviewee clearly understood the questions. Due to the nature of the research, which necessitated repeating the same question to different spokespersons, the interpreter sometimes became bored when asking the same question to different interviewees on the same day. At first she could not understand why different spokespersons were asked the same question and she would remind the researcher of the answers already given. It had to be explained to her that the goal was to determine trends in water utilisation practices, for example, and that various different opinions on the same topic were essential.

It became apparent that she initially changed the answer of the spokesperson if she felt that his or her answer was, according to her, not good enough or “wrong”. It was therefore necessary to explain to her that it was impossible for a spokesperson to give a wrong answer and that she had to translate exactly what was said. In order to prevent these mistranslations, the researcher had to become acquainted with the *siSwati* terms used in the translation of the questions in order to ensure that the correct question was stated and that the correct answer was translated.

Each research day usually started at 9 am at the interpreter’s house, after she had completed her early morning chores and seen to her family’s needs (this included fetching water). The morning’s research usually continued until 12:30 pm, when a lunch break was taken, and resumed at 2 pm to end around 4:30 pm. The morning’s research sometimes ended at 11:30 am during the summer months, due to the extreme heat of the Lowveld, especially when the research dictated house to house interviews and a lot of time was spent in the sun. The research would then continue from 2 pm to 4:30 pm.

The research on value judgements on water as a natural resource and on the service was undertaken in a different manner from research on the other research themes. The best information on value judgements could be obtained by interpreting the value judgements that the spokespersons incidentally expressed during discussions every day on different topics. During the last few weeks of research, evaluations were made of the residents’ value judgements on the research topic and the opinions of the interpreter and other

trusted spokespersons with whom a good relationship had been built up and who genuinely understood the purpose of the research.

The qualitative research on quality of life was done in a similar manner. The spokespersons' perceptions of what quality of life is and how the current water supply of their settlement influences their quality of life became clear as the research on this topic progressed. This information was received in an informal manner during casual discussions with spokespersons that often arose after interviews when the discussions naturally flowed on to other topics.

For the purpose of testing evaluations of and deductions about spokespersons' perceptions on quality of life, in-depth interviews were undertaken with eleven carefully chosen spokespersons of Makoko. The eleven spokespersons were chosen to be as diverse as possible to prevent the research from producing one-sided results (see below). Although it was not a prerequisite, seven of the eleven interviewees spoke good English and one-on-one interviews were done. This made it easier to have an in-depth discussion on each question. For the other four interviewees, the help of the interpreter was used.

The spokespersons for the research on quality of life were selected to have different sexes, ages and occupations. Five spokespersons were male and six were female. Three spokespersons were in their twenties, three in their thirties, three in their forties and two over sixty. Three of the spokespersons worked in the tribal office, a clerk, the secretary of the *sikhulu* and a cleaning lady. Other spokespersons included a nurse from the Makoko clinic, the *indvuna* (headman) of Makoko, the principal of the Makoko primary school, a field ranger at Skukuza in the Kruger National Park who is also a resident of Makoko, a few unemployed residents, and pensioners. The spokespersons had all lived in Makoko either since birth or for more than 30 years, except one. This spokesperson was originally from Kabokweni and had moved to Makoko with her family two years previously. Her husband was originally from Makoko.

The educational levels of the eleven spokespersons interviewed on their value judgements on quality of life and its link to water supply varied from none to tertiary education. Four

of these spokespeople were unmarried and two of these four had children. The married spokespersons all had between two and nine children. The average monthly income of the spokespersons' households ranged from R350 to R5 500. Eight of the eleven households' monthly income was less than R1500.

### 1.5.3 Quantitative research

The quantitative research for the whole study was done by means of questionnaires completed by 155 residents of Makoko and Phameni with the assistance of the researcher and interpreters. The objective was to test and confirm patterns and trends in water utilisation practices as well as details on all aspects of water supply determined by means of the preceding qualitative research in the two settlements. The questionnaire also verified the residents' value judgements on water as a natural resource and the values people hold regarding the nature of the water supply as a service.

It is virtually impossible to determine value judgements from questionnaires only, unless the researcher knows the people who are to complete the questionnaire very well. Therefore, the qualitative research, which preceded the quantitative research, was necessary to gain some possible answers and to pilot some questions. Due largely to the transcultural nature of the research, it was necessary to learn about all the aspects involved in the research themes in order to know what questions to ask. This is a method used with great success by Els (1994) during his research in the Kruger National Park.

The questionnaire for this study was compiled in English and then translated into *siSwati*. At first, it was decided that a few chosen residents from Makoko with a matric and a good knowledge of English could translate the questionnaire into *siSwati*. However, after checking the meaning of the translated *siSwati* questions with residents who were not involved in the translation process, it became clear that the English questions and the *siSwati* translation did not correspond. Consequently, the help of Professor Wilkes from the Department of African Languages at the University of Pretoria was sought to obtain a correct *siSwati* translation to the English questions. In the final questionnaire, each



question was printed in English with the *siSwati* translation underneath. The questionnaire is included in Appendix 1.

The questionnaire consisted of three parts.

- The first and longest part focused on details of private connections, details about the task of fetching water and the volume of water used per day.
- The second part focused on the respondents' perception (value judgement) of the quality of their water
- The third part focused on the respondents' value judgement of the water supply source (see Appendix 1).

The questionnaire consisted of multiple choice questions and open-ended questions. Multiple choice questions were used only when all the possible answers were already established through qualitative research or when the answers could only be "yes" or "no". The rest of the questionnaire consisted of open-ended questions, for example, "How do you collect rainwater?" and "What do you use rainwater for?" (see Appendix 1).

The questionnaire was amended many times until the final version was regarded as acceptable. The first versions were tested on the interpreter and other selected spokespersons and changes were made where necessary. The questionnaire was also discussed with the researcher's study leader before the quantitative research was done. In spite of all this preparation, the data processing of the 155 questionnaires proved that the final questionnaire still had faults and important lessons about constructing a questionnaire and anticipating answer possibilities were learnt. For example, the question "Which water source do you prefer?" gave the choices of Sabi River/ borehole/ fountain/ rainwater. A number of the respondents from Phameni said that they preferred a well located in Phameni. The existence of this well was not known to the researcher when the questionnaire was formulated and the well was therefore not included in the answer

options. Since the “well” option was not originally included, it had to be incorporated afterwards into the data processing process.

The qualitative research was undertaken with the help of ten research assistants (second and third year anthropology students from the University of Pretoria). The questionnaire was discussed with the research assistants before they went into the field and their queries were answered. Each assistant was given a guide/interpreter from Makoko or Phameni, selected beforehand.

These guides/interpreters were selected on the basis of their ability to

- speak English
- understand the objectives of the research, and
- grasp and convey the contents of the questionnaire.

These three criteria for selection were very important, since the quality of the quantitative research was directly dependent on full understanding of the task at hand and good communication between each guide/interpreter and each research assistant in order for them to work together successfully. All the guides were trained for two weeks before the start of the questionnaire-based research in order for them to understand the objective of each question fully. As they were also serving as interpreters, their ability to translate the interviewees’ answers accurately had to be determined. In order to prevent too much time being wasted, the training was done while the researcher had real interviews with spokespersons.

A number of high school girls from Makoko had voluntarily participated in the afternoons as co-interpreters during the preceding qualitative research and now expected to be selected as guides/interpreters for the quantitative research. However, it was considered best to select the guides/interpreters from among residents who were unemployed non-students, as the 155 questionnaires would take three to four full week days to complete. It was not practical to expect school students to miss school in order to

help with the research. However, two of the volunteer high school girls were so eager to serve as guides/interpreters during the quantitative research that they convinced their school principal that it would be an educational experience for them and he gave them permission to miss the few days of school. The rest of the group of guides was comprised of one male and six females (eight females including the two high school girls). The guides' ages ranged from 20 to 35.

The completion of the 155 questionnaires took three full days. A total of 54.5% of the 155 questionnaires were completed in Makoko and 45.5% were completed in Phameni. On the first day, the assistants met the guides/interpreters at a pre-arranged place and time in Makoko. The researcher teamed up each assistant with a guide/interpreter, based on a personal judgement on who could work together successfully.

It so happened that when the quantitative research started, there were nine guides/interpreters and ten research assistants. Consequently, one of the guides/interpreters teamed up with two research assistants. Each research assistant interviewed an average of five respondents per day, which meant that 45 questionnaires were completed per day. The average time it took the respondents to complete one questionnaire was approximately 45 minutes.

The questionnaires were completed at the respondents' homes. During the training, the guides/interpreters were asked always to explain to the respondents who the assistants were, where they come from and what would be done with the information given in the questionnaire. The assistants and their guides/interpreters were dropped off at a certain section of Makoko or Phameni and were allocated two or three streets where they entered every second or third home and asked the residents if they would complete the questionnaire. The assistants and their guides/interpreters then met up again at a pre-determined time and location where everyone had lunch together. The afternoon's research was then continued in the same manner.

All answer options of the choice-questions were numbered to facilitate data processing. The research assistant marked the answer option of the respondent in a block next to the

option's number (see Appendix 1). The data was processed in Excel '95 and then expressed in percentages. Due to the help of the interpreters, all the questionnaires could be completed on the questionnaires in English and this eliminated the task of translating the answers, which saved time.

The open-ended questions' answers took much longer to process than those of the multiple choice questions, because every answer had to be read, evaluated and noted individually. In order to express the open-ended questions' answers in percentages, tables were drawn up with a column for every answer. The fact that there were usually only three to four different answers to a question made this process of establishing possible answers to open-ended questions reasonably simple. Open-ended questions were often designed to allow the respondents to elaborate on the answer of a preceding multiple choice question. So, for example, if the multiple choice question was "What time of the day is the queue at the water point the longest?" and the answer options were "Early morning/ Late morning/ Midday/ Late afternoon/ Early evening", then the next question would be: "Why do you say so?".

The processing of the quantitative data proved that the trends, practices and value judgements noted during qualitative research were correctly evaluated. The quantitative research did not only confirm the qualitative research, but indeed led to deeper insight into all the research themes. Most importantly, the quantitative research made it possible to express the research findings statistically, which brings a new dimension to "traditional" anthropological research (Els 1996: 56-65).

## 1.6 NOTE ON THE TEXT

The orthography of the *siSwati* terms used in this study is in line with that of the *Concise siSwati Dictionary* (Rycroft 1995). Throughout *siSwati*, terms such as *sikhulu*, *indvuna* (s), *tindvuna* (pl), *libandla*, *khonta* and *indlovukati* are used rather than their English translation because the cultural essence of these terms is lost in translation.

The term “settlement” is used throughout the study in references to Makoko and Phameni where the research was done. This term is used instead of “community” or “village”, which is often used in literature to describe rural places of living. The *Pocket Oxford Dictionary* (Fowler and Fowler 1969) defines the term “settlement” as “a body of social reformers living in poor district” whereas “community” is defined as “all members of a State, town, school, convent, profession, or bee-hive”. The term “community” has too wide a context and therefore the term “settlement” is preferred.

The term “private connection” is widely used in this study and refers to an illegal water connection made from a bulk water supply line to a private stand (see Section 3.2.2). The term “private connection” was preferred to the term “illegal connection” during qualitative research involving spokespersons from Makoko and Phameni, due to the strong negative connotation of the word “illegal”. “Private connection” is thus used as a euphemism for “illegal connection”. However, the term “private connection” must be understood to mean illegal connection throughout the study.

The Department of Water Affairs and Forestry is often referred to in this study by its acronym, DWAF. This is done for practical reasons (it is shorter to print, but also simpler to read). The acronym is readily used by spokespersons to refer to this government department.

The Harvard method of reference is used and the bibliography is presented in accordance with the instructions of the guide entitled *Verwysingstegnieke* (Universiteit van Pretoria) by Marlene Burger (1992).