

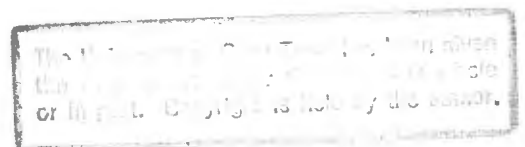
**LOCAL-LEVEL INSTITUTIONS AND COMMON  
PROPERTY RESOURCE MANAGEMENT IN THE  
KHORIXAS REGIONAL CONSTITUENCY,  
NAMIBIA**

**BY**

**AAH MALISEME SEKHESA**

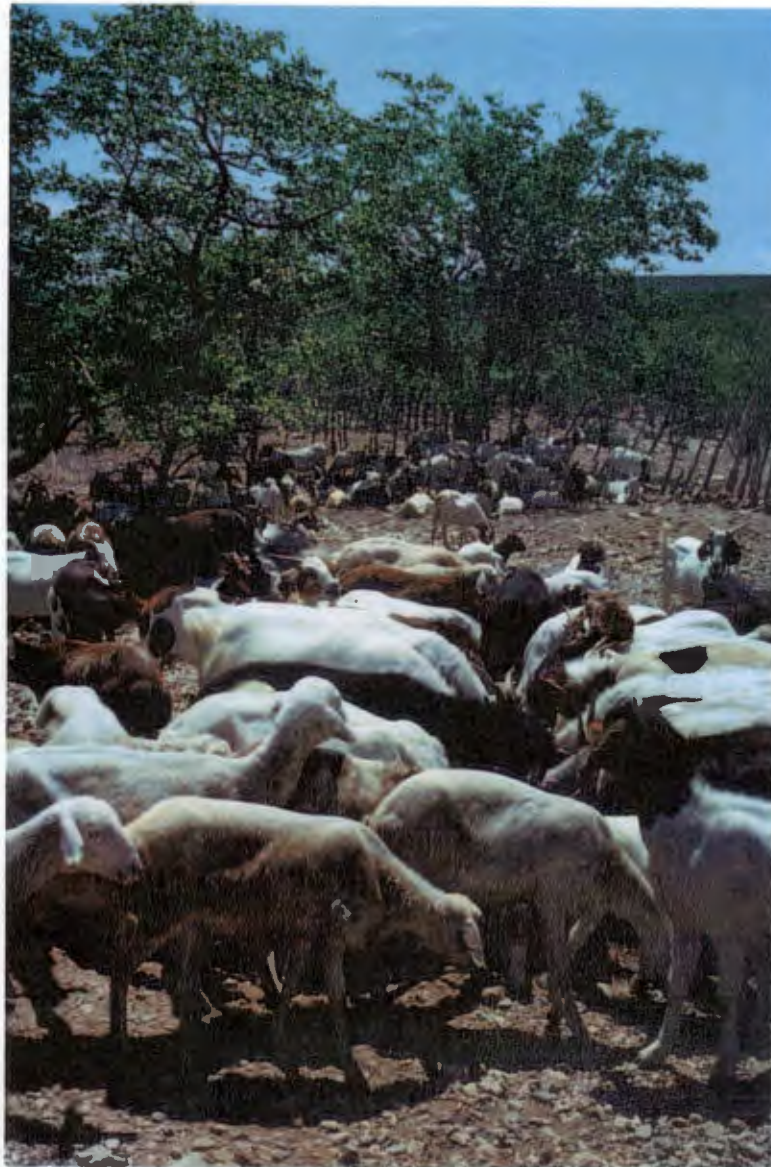
**Dissertation submitted in partial fulfilment  
of the requirements of the Degree of Master of Philosophy  
in Environmental Science**

**University of Cape Town  
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**Plate 1:** A situation of open access exists due to lack of control on use of the natural resources, thereby putting pressure on the scarce resources

## ABSTRACT

Local-level institutions under the 'right' conditions and given an enabling environment, can be some of the appropriate and effective institutions for management of certain resources. The 'common property regimes' under certain conditions can also act as powerful catalysts for effective functioning local-level management institutions. Different countries have therefore formulated policies that would enable local-level institutions to participate in management of natural resources. However, policy changes that introduce new local-level management institutions have either been ineffective, or there have not been adequate mechanisms and appropriate institutional arrangements to support implementation of policies at the local level. The socio-cultural, political, economic and legislative conditions that are necessary for the effective functioning local-level institutions and 'common property regimes' at the local level are often lacking or inappropriate. Moreover, attributes of achieving sustainable management of the resource are often not taken cognisance of in the implementation of policies. As a result, local-level institutions have often failed to meet the desired policy objectives and therefore have been ineffective.

In 1993, the Government of Namibia formulated the Rural Water Supply Policy which provides for the establishment of the Water Point Committees to take responsibility for management of water supply in rural areas. By establishing these local-level water management institutions, policy makers in Namibia assume that water resources in the rural areas will be managed sustainably. This dissertation seeks to evaluate the effectiveness of local-level institutions in the management of rural water supply in Namibia. Water Point Committees in the Khorixas regional constituency will be used as an illustration. Specifically, this dissertation examines the provisions of the Rural Water Supply Policy and the National Land Policy and assesses their implications with regards to management of land and water in communal areas. In addition, the socio-economic conditions of the Khorixas constituency and their appropriateness for local-level management are examined. The extent to which the attributes of sustainability have been considered in the implementation of policies is also examined. Broad recommendations that could improve the effectiveness of the Water Point Committees in the Khorixas constituency and possibly in other areas in Namibia are made.

Methods used to provide information necessary for this study included: extensive literature reviews; field work in Namibia as well as interviews with government ministries; non-governmental organisations; private agencies; academic institutions; traditional leaders and other key stakeholders in Namibia. Discussions were also held with members of the community in the Khorixas constituency to obtain their views on the role and functions of the Water Point Committees and assess their understanding of the principles of the Rural Water Supply Policy and the National Land Policy.

The lack of security of tenure of land and water for local communities and the lack of appropriate measures to support effective functioning Water Point Committees will be a major impediment to sustainable management of water resources in the Khorixas constituency. Moreover, new policy changes that are introduced without taking cognisance of the social organisation of local communities will likely hamper the effectiveness of the Water Point Committees. Sustainable management of water resources could be unlikely if mechanisms are not in place at the local level to ensure that implementation of policies takes cognisance of the principles or attributes of sustainability. This dissertation argues that effective Water Point Committees in the Khorixas constituency and possibly in other areas in Namibia will therefore emerge provided:

- the National Land Policy provides security of tenure of land and water for local communities;
- there are new partnership arrangements between the Water Point Committees and the state, with the state providing a more enabling legislative framework and incentives for water management;
- traditional institutions are recognised and are fully involved in the decision making process, and indigenous management systems are utilised where possible;
- the capacity of all institutions involved in the management of water supply is enhanced;
- communities in the Khorixas constituency are well defined; and,
- principles of sustainability are considered in the implementation of all rural water provision programmes.

Thus, a variety of measures need to be put in place to ensure that policies supporting local-level management are translated into practical and sustainable actions.

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## LIST OF ABBREVIATIONS

<b>CAMPFIRE</b>	Communal Areas Management Programme for Indigenous Resources
<b>CWC</b>	Central Water Committee
<b>DRWS</b>	Directorate of Rural Water Supply
<b>DWA</b>	Department of Water Affairs
<b>EIA</b>	Environmental Impact Assessment
<b>GTZ</b>	Deutsche Gesellschaft für Technische Zusammenarbeit
<b>ICLEI</b>	International Council for Local Environmental Initiatives
<b>IFAD</b>	International Fund for Agricultural Development
<b>IUCN</b>	World Conservation Union
<b>LWC</b>	Local Water Committee
<b>N\$</b>	Namibian Dollar
<b>NANGOF</b>	Non-Governmental Organisations of Namibia
<b>PRA</b>	Participatory Rural Appraisal
<b>RWEO</b>	Rural Water Extension Officer
<b>SEA</b>	Strategic Environment Assessment
<b>SIAPAC</b>	Social Impact Assessment and Policy Analysis Corporation
<b>UNCED</b>	United Nations Conference on Environment and Development
<b>UNDP</b>	United Nations Development Programme
<b>USAID</b>	United States Agency for International Development
<b>WASP</b>	Water and Sanitation Policy
<b>WPC</b>	Water Point Committee

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# CHAPTER ONE

## 1. INTRODUCTION

### 1.1 BACKGROUND

Since the 1970's, there have been increasing attempts by policy makers in developed and developing countries to devolve authority for management of natural resources to local-level institutions or user groups (Lawry, 1990). The growing interest from policy makers in management of natural resources by local-level institutions and local communities stems from the recognition that local-level institutions and local communities, through their traditional management systems have managed to use their resources sustainably over generations, which accounts for the existence of these resources today (Berkes and Farvar, 1989). Moreover, local communities and their institutions understand the local conditions and the problems relating to their local resources better than any other institutions. Due to their closeness to the resources and the practical knowledge they have accumulated in managing these resources, they are therefore capable, and can play a valuable role as 'guardians' of their natural resources (Hangula, 1995).

However, interest and attempts to involve local-level institutions have not always been accompanied by effective policies that would enable sustainable management of these resources, particularly where the resources are used communally (Cleaver, 1994). In some cases, there are neither adequate mechanisms to implement policies nor appropriate institutional arrangements to support local-level management of resources (Lawry, 1990; Western and Wright, 1993). In sub-Saharan Africa, where most of the resources such as grazing land, forests, water, wildlife and others are used in common, poor management has often been attributed to inadequate mechanisms for implementing policies at the local level and failure to establish appropriate institutional arrangements for local-level management. For example, incentives for individuals to participate in local management activities are weak, local institutions lack the capacity to fulfil their responsibilities and are unable to apply sanctions to enforce the rules (Lawry, 1990; Critchley and Turner, 1996).

Namibia has recognised the need to formulate new policies aimed at sustainable utilisation of its natural resources (National Planning Commission, 1995). Since the independence of Namibia from the Republic of South Africa in 1990, the Government of Namibia through its conservation authorities has developed new approaches for management of natural resources. These approaches put emphasis on sustainable utilisation of resources such as wildlife by devolving control and management to local people and locally-based organisations in the communal areas (Jones, 1996). However, one of the most critical problems that pertains to these communal areas, is lack of provision for security of land tenure in the National Land Policy. In the absence of secure land tenure in communal areas, there will be no incentive for communities to sustainably manage these common resources (Corbett and Daniels, 1996; Dewdney, 1996).

Without secure tenure, local communities will only consider their short-term interests and will exploit the resources for maximum immediate gain, regardless of future consequences for the resource base (Western and Wright, 1993). In the context of this dissertation, water supply in the Khorixas regional constituency in Namibia is a good example where resources are communally used and management is in the hands of local institutions, and yet communities do not have secure tenure of the natural resources, in particular land and water. Lack of security of tenure is therefore one of the key obstacles to sustainable management of water resources by local communities and their local-level institutions. Furthermore, although relevant policies have been formulated, there are no adequate mechanisms for implementation of these policies at the local level. Thus, the effectiveness of local-level institutions is hampered.

In January 1997, the Directorate of Environment and Tourism, on behalf of the Namibian Programme to Combat Desertification (NAPCOD) contracted the team of eight Masters students enrolled in the Department of Environmental and Geographical Science at the University of Cape Town to undertake a retrospective assessment of environmental impacts of borehole supply in Namibia. Two case studies (Khorixas regional constituency and Gam resettlement area) were selected by the study team in consultation with some representatives from NAPCOD. In Khorixas, most of the boreholes were sunk under the 1992/93 Drought Relief Programme, while in Gam borehole supply provision was a

component of the Herero Resettlement Programme in 1993. The case study areas lie approximately on the same latitude across Namibia's East-West rainfall gradient. For this reason, the study team together with the representatives from NAPCOD thought that these areas would form a useful comparison as they represented two different climatic environments in Namibia.

The need for undertaking an environmental assessment of the boreholes was a result of concerns raised by several government and non-governmental institutions in Namibia, that there is insufficient knowledge regarding the impact of boreholes on the environment. This lack of knowledge results in inadequate assessment of environmental impacts in the planning process of borehole provision. Members of NAPCOD therefore felt there was a need to establish a scientific basis from which the planning process for boreholes may be informed. Funding for the study was provided by Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).

The case studies focused on the environmental implications of borehole supply in the Khorixas regional constituency and the Gam resettlement area during the 1992/93 Drought Relief Programme and any other boreholes that were not necessarily provided as part of the Relief Programme. One of the key findings by the study team was that security of tenure of natural resources in communal areas such as the Khorixas constituency, was one of the critical issues that hamper efforts for sustainable management of natural resources by local communities and their locally-based institutions. This dissertation also recognises that there are other factors which need to be taken cognisance of in the management of water supply in communal areas in Namibia. These include the organisation and stability of communities, capacity of institutions involved in local-level management, supporting legislative framework, recognition of traditional institutions and utilisation of indigenous management systems, defining the communities and environmental sustainability of water provision programmes.

During the investigation, individual students focused on different aspects of borehole provision in Namibia at national, regional and community levels. Issues investigated included: institutional structures involved in borehole siting; policies and decision making;

land tenure and community ownership; socio-economic and biophysical environmental issues and monitoring of boreholes. Information compiled by all the students was analysed and a Baseline Report was prepared.

This dissertation, while drawing on the information in the Baseline Report provides an analysis of conditions (socio-economic, political and cultural) under which the 'common property regimes' and local-level management of resources are likely to succeed. An in-depth analysis of common property management as well as the implications of different 'resource regimes' for local-level resource management is undertaken. Factors which facilitate effective local-level management of natural resources are examined with the view to assessing whether conditions in the Khorixas regional constituency lend themselves to effective local-level management.

The dissertation attempts to highlight that local-level institutions, under the 'right' circumstances and given an enabling environment, can be effective structures for common property resource management. It is highlighted in this dissertation that the 'common property regimes' can act as powerful catalysts for development of local-level institutions and community participation in resource management. The success of the 'common property regimes' and local-level institutions in local management is however dependent on other factors such as social stability of communities, genuine devolution of decision making powers to resource users, clearly defined rules and regulations on the use of the resource, assessment of benefits to be derived from resource management and other factors which are outlined in detail in Chapters 2. and 3. This dissertation analyses the effectiveness of the Water Point Committees in the Khorixas regional constituency in Namibia as an illustration. Recommendations are made on policy and institutional issues that need to be addressed in order for the Water Point Committees in the Khorixas regional constituency to be effective.

## **1.2 STATEMENT OF THE PROBLEM**

It is recognised world-wide that devolving decision making powers to 'grass-roots' management institutions or user groups in line with central government policies can lead to

sustainable and equitable natural resource management (Botelle and Rohde, 1995). Community management is also viewed as the key to sustaining the supply of services to the poor (UNDP, 1990). However, for such institutions to manage their resources sustainably, they must have secure tenure of the land and the resources, and the benefits of management must be perceived to exceed the costs (Murphree, 1994; Cleaver, 1994). In addition, such local-level institutions must work within a framework that is socially and culturally acceptable, that takes account of existing social organisations and cultural attitudes (Botelle and Rhode, 1995).

In the Khorixas regional constituency in Namibia, the lack of security of tenure of land and natural resources, inadequate mechanisms to implement policies at the local level and inappropriate institutional and social organisation arrangements could hamper any efforts for sustainable management of water supply.

The Rural Water Supply Policy of 1993 in Namibia proposes to give communities control and responsibility for operation and maintenance of their boreholes (Department of Water Affairs, 1993). Water Point Committees are being established nation-wide to take overall responsibility for borehole management. The Government envisages that after 15 years communities will take full responsibility for their water supply (Koch, pers. comm., 1997). The policy makers are thus assuming that by creating these locally-based committees, the people in communal areas will be motivated to participate fully in the planning and operation of their water supply and will therefore use their resources sustainably (Department of Water Affairs, 1993).

However, the land on which these communities live belongs to the State, affording resident communities little or no security. Due to the breakdown of powers of customary institutions, such as traditional chiefs and headmen to control and enforce any rules on use of land in communal areas, a system of open access exists for people and their livestock (MPhil. Baseline Report, 1996). Local communities do not have the right to exclude 'outsiders' and regulate use of the resource. Without powers to exclude 'outsiders' who do not contribute to upkeep of water supply, successful management of water becomes

difficult. Moreover, this lack of secure tenure of natural resources acts as a disincentive to sustainable management of water and grazing land.

This dissertation therefore, analyses the provisions of the Namibian Rural Water Supply Policy and the National Land Policy as they directly affect management of water in the Khorixas regional constituency. It examines the extent to which conditions are appropriate and mechanisms are in place to support local-level water management in the Khorixas regional constituency and possibly in other communal areas in Namibia.

### **1.3 AIMS AND OBJECTIVES**

#### **1.3.1 AIM**

The overall aim of this dissertation is to evaluate the effectiveness of local-level institutions in the management of rural water supply in Namibia. The Water Point Committees in the Khorixas regional constituency will be used as an illustration.

#### **1.3.2 SPECIFIC OBJECTIVES**

The objectives of this study are to:

- provide a conceptual framework of the different natural resource management regimes<sup>1</sup> and their implications for sustainable local-level management of natural resources;

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<sup>1</sup>A resource regime is a structure of rights and duties characterising the relationship of individuals to one another with respect to that particular resource (International Fund for Agricultural Development, 1995).

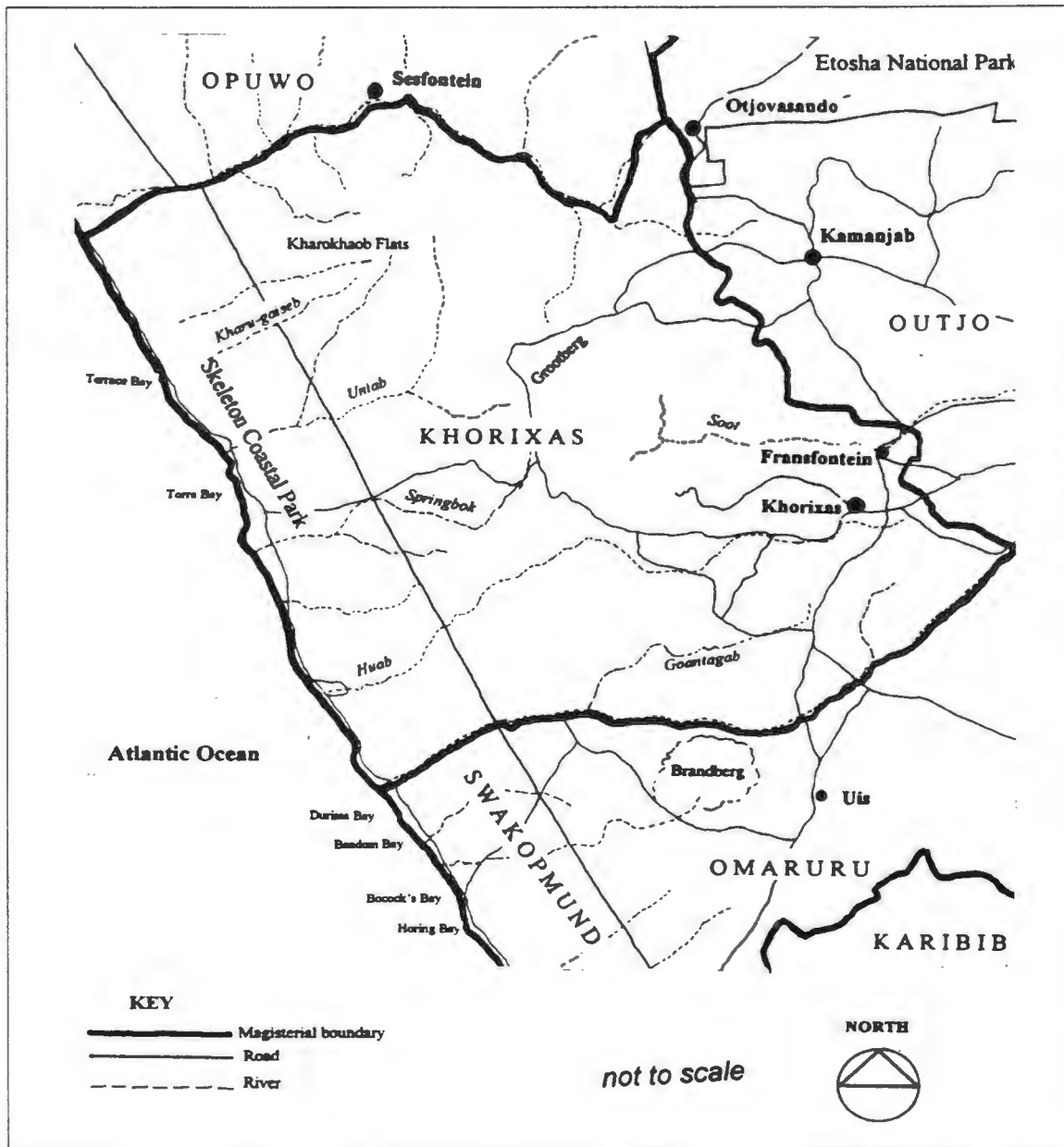
- provide the rationale for local-level involvement in natural resource management;
- provide a brief overview of the socio-economic dynamics of communities in the Khorixas regional constituency;
- review the Namibian Rural Water Supply Policy, with particular focus on the structure, role and capacity of the Water Point Committees, and assess the application of the policy in the Khorixas regional constituency;
- provide a brief overview of the provisions of the National Land Policy in Namibia with particular focus on its implications for the communal areas;
- analyse the extent to which the Rural Water Supply Policy and the National Land Policy in Namibia facilitate or hamper the effectiveness of the Water Point Committees in the Khorixas regional constituency;
- examine the socio-economic conditions in the Khorixas regional constituency and assess their appropriateness for the effective functioning Water Point Committees; and,
- make broad recommendations that are likely to improve the effectiveness of the Water Point Committees in the Khorixas regional constituency and elsewhere in Namibia.

#### **1.4 DESCRIPTION OF THE STUDY AREA**

The Khorixas regional constituency covers the communal land in the southern part of the Kunene region in Namibia, formerly known as northern Damaraland (refer to Maps 1.1 and 1.2). Following Namibia's independence, a 'Delimitation Commission' was appointed to draw new regional administrative boundaries for Namibia which were not to be based on ethnic or tribal lines. The former Damaraland is now split into the southern part of the new Kunene region (where the Khorixas regional constituency is located) and the northern part of the new Erongo region (MPhil. Baseline Report, 1997 citing Mhone, 1994).

During the early 1960's, the eastern areas of Damaraland were extensively settled by white commercial farmers while the more marginal areas in the west were declared communal areas (MPhil. Baseline Report, 1997). By the mid 1960's many of the white farmers had





Map 1.2 The study area

vacated their commercial farms, partly due to declining viability of commercial farming (Sullivan, 1996). During the early 1970's, the State purchased all farms that belonged to white farmers, and communal farmers from various parts of Namibia were moved into these new farms (Sullivan, 1996). It is generally believed that communal farmers were forcibly moved to these farms (Sullivan, 1996).

The communal farmers were not settled into villages, rather individual families were settled at existing water points within expropriated farms. To date, each farm has a main settlement (the old homestead) and a number of livestock posts up to a maximum of four. Generally, the old homesteads support a larger number of families, while the posts support a smaller number of people. The increasing human and livestock migration into the area, particularly during the drought periods has put pressure on natural resources like water and grazing land (MPhil. Baseline Report, 1997).

The Khorixas regional constituency can be classified as arid to semi-arid. Rainfall is highly variable and erratic, both seasonally and spatially. It generally ranges from less than 50mm along the coast to about 400mm per annum around Khorixas area. The main rainfall period is usually during the months of February and March (MPhil. Baseline Report, 1997 citing Mhone, 1994). These conditions give rise to frequent droughts.

Water is therefore one of the most important and yet scarce resources in the region, both for human and livestock survival. The Government of Namibia consequently recognises that a water management policy is a critical component of the country's development strategy (National Planning Commission, 1995).

## **1.5 METHODOLOGY OF THE BASELINE REPORT AND THE DISSERTATION**

### **1.5.1 APPROACH TO BASELINE REPORT**

Due to the multi-faceted nature of the study, a variety of methods were used to gather information. These are listed in this section :

- **A preliminary one week visit to Namibia**

In November 1996, members of the study team visited Namibia and held discussions with different key stakeholders to determine the scope of the study.

- **Literature review**

Prior to the field visit in Namibia, members of the study team undertook a comprehensive literature review on Namibia in order to understand the nature and range of issues that were to be addressed in the study.

- **Interviews in Namibia**

The study team held interviews in Namibia with key stakeholders and relevant informants in government ministries and departments, non-governmental organisations, academic institutions, aid agencies, private agencies, independent consultants, prominent people in the communities who are familiar with the issues investigated including members of the Water Point Committees and some traditional leaders. All interviews were carried out between November 1996 and February 1997.

- **Field work**

Field work in the two case study areas in Namibia included:

- a) Observations on borehole infrastructure such as pump installations and reservoirs. The study team checked whether the boreholes yielded sufficient water for community needs and if boreholes were being serviced. The relation between animal watering points and where people obtained their water was also noted.
- b) Water analyses were conducted at different boreholes to assess the health impacts of water from the boreholes.
- c) Informal discussions were held with local people to obtain their views on the Rural Water Supply Policy.
- d) Qualitative analyses of soils and vegetation were carried out within a 500-800 metre radius of the boreholes. Observations and informal interviews with the people living in the settlements were also conducted.
- e) A Participatory Rural Appraisal (PRA) technique was employed to gather information on: livelihood systems and resource use; borehole networks; demographic details; settlement patterns and livestock variations over time and socio-economic relationships. During the PRA exercises, the study team acted as facilitators. Local translators were used to interpret discussions with local people.

In the Khorixas regional constituency, field work was done in communities around 14 boreholes, while in the Gam resettlement area, only 5 boreholes were visited. The selection of the boreholes was largely based on availability of data on the boreholes and accessibility to the boreholes.

### **1.5.2 APPROACH TO THE DISSERTATION**

This dissertation has used some information collected for the Baseline Report. Additional information pertinent to this dissertation was collected by the author during the field work, and interviews were held in Namibia with government officials in different ministries. The government officials included senior officers in the Directorate of Rural Water Supply such as the Director of Rural Water Supply Division in Windhoek, the Regional Head of the Directorate of Rural Water Supply in Khorixas and the Senior Foreman responsible for maintenance of boreholes in Khorixas. Discussions with the officials of the Directorate of Rural Water Supply focused on the role, structure and status of the Water Point Committees and general implementation of the Rural Water Supply Policy, particularly in communal areas. An interview with the Director of Lands, Resettlement and Rehabilitation in the Ministry of Lands, Resettlement and Rehabilitation in Windhoek was also held. The interview focused on land use and land tenure problems in Namibia. The implications of the National Land Policy on natural resource management in communal areas were addressed. In Khorixas, interviews were held with some traditional leaders, members of the Water Point Committees and non-governmental organisations. Discussions focused on the implications of the National Land Policy on natural resource management in communal areas and the implementation of the Rural Water Supply Policy in the Khorixas regional constituency. In addition to these interviews, an extensive literature review has been undertaken.

In order to provide the rationale for local-level involvement in common property resource management, this dissertation has provided a conceptual framework on common property management and the role of local institutions in natural resource management. Analysis of the relevant policies (mainly the Rural Water Supply Policy and the National Land Policy in Namibia) and how they affect the effectiveness of local-level institutions in managing

rural water supply in the Khorixas regional constituency has been made. Socio-economic conditions of communities in the Khorixas constituency are also examined since they directly affect resource management. Constraints likely to hamper the effectiveness of local-level institutions in management of rural water supply are identified. Where appropriate, the dissertation draws on experiences from other countries in order to provide some lessons for Namibia.

## **1.6 ASSUMPTIONS AND LIMITATIONS**

### **1.6.1 ASSUMPTIONS**

This dissertation assumes that policies supporting local-level involvement in common property resource management can lead to equitable and sustainable management of natural resources. However, if the involvement of local-level institutions is not accompanied by adequate mechanisms and appropriate institutional arrangements that support implementation of these policies at the local level, sustainable management of resources may be difficult to achieve.

This dissertation has used some of the information contained in the MPhil. Baseline Report (1997) to analyse the effectiveness of the Water Point Committees in the management of rural water supply in the Khorixas regional constituency. It is assumed that information in the Baseline Report is a true reflection of the situation in the Khorixas regional constituency and in Namibia. Moreover, it is assumed that there were no misinterpretations by the study team or the translators during the field work.

### **1.6.2 LIMITATIONS**

A key objective of this dissertation is to analyse the extent to which the provisions of the Rural Water Supply Policy and the National Land Policy in Namibia hamper or facilitate the effectiveness of the Water Point Committees in the Khorixas regional constituency. One of the major limitations of this dissertation is that the Rural Water Supply Policy in

Namibia is still in the early stages of implementation. Workshops are being held country-wide to discuss some of the concerns of the different stakeholders on the policy. The National Land Policy has been published as a Green Paper for comment and therefore certain provisions may change after the consultative process.

As this dissertation had to be completed within three months, time was a major constraint. In reviewing the relevant policies in Namibia, in particular the National Land Policy, it was recognised that a comprehensive understanding of the historical background and complexities around the land issue in Namibia was necessary. Due to limited time to complete both the field work and the dissertation, the author of this dissertation as an 'outsider' may not have been aware of some of the salient issues that culminated in the present National Land Policy in Namibia. Finally, debates on common property resource management and the effectiveness of local-level involvement in resource management are extremely complex and have far reaching implications. Within the time available, it was necessary to focus only on specific aspects.

## **1.7 STRUCTURE OF THE DISSERTATION**

This dissertation is presented in six chapters. Chapter 1 provides an introduction to the preparation of the Baseline Report and the dissertation. The aims and objectives of the dissertation as well as methods used in compiling the Baseline Report and the dissertation are outlined. Assumptions and limitations of the dissertation are then spelled out.

Chapter 2 provides a conceptual framework for common property resource management. The chapter describes the different 'resource regimes' and their implications for local-level management. Using some of the experiences in southern Africa, the chapter illustrates how the 'common property regimes' under certain conditions may be some of the more successful management systems for some natural resources. The chapter summarises some of the conditions that are necessary for the 'common property regimes' to be effective in natural resource management. It is argued that one of the most fundamental conditions necessary for the success of a 'common property regime' is 'genuine devolution' of decision making and management powers to appropriate local-level institutions.

Chapter 3 provides a definition of devolution and outlines some of the objectives of public participation. The chapter highlights that although devolution has gained popularity amongst policy-makers world-wide, there have been different interpretations of what it is and what it means. The chapter outlines some of the attempts by different countries to increase public participation in environmental management. Some of the initiatives taken at an international level to facilitate devolution to local-level institutions are described. Finally, the chapter provides the rationale for the involvement of local-level institutions in natural resource management and summarises some of the conditions necessary for local-level institutions to be effective.

Chapter 4 describes the socio-economic characteristics of the Khorixas regional constituency and highlights some of the features that are likely to affect the effectiveness of local-level management in the constituency.

Chapter 5 provides a review of the Namibian Rural Water Supply Policy and the National Land Policy. The main provisions of the policies are outlined with specific attention to the way they affect local-level management of rural water supply in Namibia and specifically in the Khorixas regional constituency.

Chapter 6 provides an analysis of the extent to which conditions in the Khorixas regional constituency seem appropriate for supporting local-level management. This analysis draws from the literature review in Chapters 2 and 3, the description of the case-study in Chapter 4 and the review of policies in Chapter 5. The chapter analyses the major provisions of the Rural Water Supply Policy and the National Land Policy and how they will affect the effectiveness of the Water Point Committees in the Khorixas regional constituency. Socio-economic dynamics of the Khorixas regional constituency and how they will influence the effectiveness of the Water Point Committees are analysed. The chapter illustrates that there is lack of adequate mechanisms and appropriate institutional arrangements to implement and translate policies into practicable actions, thereby affecting the extent to which the Water Point Committees can be effective.

Finally in Chapter 7, conclusions and recommendations are made based on the findings in Chapter 6. Chapter 7 highlights that while local-level management of water in the Khorixas regional constituency is necessary and is the key to enhancing sustainable use of water in the constituency, creating effective management institutions will be a great challenge for the Government of Namibia. The challenge in creating effective Water Point Committees in the Khorixas regional constituency demands putting in place a variety of policy and institutional measures which will support local-level management.

## CHAPTER TWO

## **2. COMMON PROPERTY MANAGEMENT: A CONCEPTUAL FRAMEWORK**

### **2.1 INTRODUCTION**

The term 'common property' is generally understood to refer to resources which are communally owned and accessible for use by all members of the community. Under 'common property' it is often considered difficult to exclude others (IFAD, 1995). In natural resource management, use of the term 'common property' has been largely misunderstood and misused in the last decades (IFAD, 1995). Many planners and other development workers observing a situation where there is no management regime conclude that it is a situation of 'common property' (Bromley and Cernea, 1989). This misunderstanding has often led governments to formulate inappropriate policy decisions because resource degradation has been incorrectly attributed to 'common property' systems (Bromley and Cernea, 1989; Ostrom, 1990).

The use of the term 'common property resource' has also been controversial (IFAD, 1995). For example, IFAD (1995) argues that there is no such thing as 'common property resource', but that natural resources can be controlled and managed either as common property, state property, or private property. However, a review of the literature shows wide and accepted use of the term.

In this dissertation 'common property resources' will be used to define those resources which are communally used and managed, while 'common property regime' will be used to define the management system for common property resources. Before proceeding any further, it is perhaps also appropriate in this section to define other terms which will be used frequently in this chapter and subsequent chapters. 'Resource regime' is a structure of rights and duties characterising the relationship of individuals to one another with respect to a particular resource (IFAD, 1995). 'Property right' is a claim to a benefit stream that some authority will agree to protect through the assignment and enforcement of obligations on others who may seek to enjoy that benefit stream (IFAD, 1995). When one has a right,

he/she has the expectation both in law and practice that his/her claims will be respected (Bromley and Cernea, 1989; IFAD, 1995).

This chapter provides a background to the debates on common property management and local-level involvement in common property resource management. The chapter outlines different 'resource regimes' and then analyses the implications of these 'resource regimes' in terms of local-level common property resource management. Finally, the chapter summarises the advantages of a 'common property regime' and identifies conditions under which this 'regime' functions most effectively.

## 2.2 COMMON PROPERTY MANAGEMENT AS AN EVOLVING SYSTEM

The interest in local common property management has evolved from debates over how systems of 'property rights' affect resource management. Historically, under common property resource management practised by rural communities, all members of the community had access to resources, but rules and regulations on how to use the resource were determined by communities collectively. The most influential model in the analysis of common property management was Hardin's 'tragedy of the commons' in 1968 (Lawry, 1990; Cousins, 1995). Ostrom (1990, p.3) however points out that, as far back in history Aristotle noticed the 'tragedy of the commons' by observing that: "*what is common to the greatest number, has the least care bestowed upon it. Everyone thinks chiefly of his own, hardly at all of the common interest*". Ostrom (1990, p.3 citing Gordon, 1954) further mentions that Gordon expounded a similar logic in what he termed 'The economic theory of a common-property resource: the fishery', which argued that:

*"...Wealth that is free for all is valued by no one, because he who is foolhardy enough for its proper time of use will only find it has been taken by another...The fish in the sea are valueless to the fisherman, because there is no assurance that they will be there for him tomorrow if they are left behind today"*.

Based on Hardin's model of the 'tragedy of the commons' two other models were also conceptualised, and became influential in explaining resource degradation whenever many individuals use a scarce resource in common. These are the 'prisoner's dilemma game'

and the 'logic of collective action' (Ostrom, 1990; IFAD, 1995). Central to each of these models is the 'free-rider' problem. Thus, whenever one person cannot be excluded from the benefits that others provide, each person is motivated not to contribute to the joint effort, but to 'free-ride' on the efforts of others. If all participants choose to 'free-ride' then the collective benefit will not be produced. Of these models, literature suggests that the 'tragedy of the commons' is widely known and has been used to explain the current environmental degradation of common property resources.

### 2.2.1 TRAGEDY OF THE COMMONS

Using communal grazing as his model, Hardin argues that the private benefit of grazing an additional animal on a common range exceeds the private costs because the costs of maintaining the rangeland are shifted onto the group as a whole (Cousins, 1995). This occurs because the marginal costs of overgrazing are shared among the community users while the herder enjoys the total benefit of the added unit of production. Under such circumstances, rational herders will build up their private herds even after the carrying capacity of the commons is exceeded, thereby degrading the resource. Eventually, ecological collapse results.

As the model of the 'tragedy of the commons' was applied to diverse problems such as firewood crisis in developing countries, acid rain and other environmental problems, it gained much interest globally. For Hardin, the solution to the 'tragedy of the commons' was in tenure reform in the form of private property or state property in order to ensure sustainable use. At the heart of this conviction is that institutional change must come from outside and must be imposed on the individuals affected (Lawry, 1990; Ostrom, 1990). By describing communal use in terms of 'tragedy of the commons', Hardin's model did not consider the possibility of communal management or 'common property regime' as an alternative management regime and its potential to promote sustainable use (Hasler, 1996). This omission ignores the fact that many natural resources are not always open access, but are managed under traditional rules governing their use (Berkes and Farvar, 1989). Where open access may occur, "*there are frequently cultural or political sanctions or practical restrictions...which effect who has access to resources*" (Hasler, 1996, p.20).

Hardin's rationale of the 'tragedy of the commons' influenced some of the policy prescriptions in the control and regulation of natural resources such as grazing, forests and fisheries particularly in developing countries. Recommendations were made by various writers and policy analysts that most natural resources be privatised or controlled by central governments. Nationalising the ownership of forests in developing countries for example, was advocated on the grounds that local villagers could not manage the forests in order to sustain their productivity and value in reducing soil erosion. Even more extreme was the recommendation by other writers that international authorities should control the use of natural resources (Ostrom, 1990).

In southern Africa for example, Botswana developed its Tribal Grazing Lands Policy drawing the rationale directly from Hardin's model (Lawry, 1990). The Tribal Grazing Lands Policy programme, assisted by the World Bank, granted individuals long-term, exclusive lease rights to lands previously used for communal grazing. Implementation of this Policy excluded the needs of poor sections of the community since the costs of delineating clear property rights were prohibitively high (Lane and Morehead, 1996). The Policy led to emergence of a new 'elite' of wealthy land owners who monopolised water sources and controlled the best grazing land (Lane and Morehead, 1996).

### **2.3 RESOURCE REGIMES AND THEIR IMPLICATIONS FOR LOCAL-LEVEL COMMON PROPERTY RESOURCE MANAGEMENT**

Understanding different 'resource regimes' is considered significant here, because whether the resources are managed sustainably or not depends largely on how 'property rights' or 'use rights' are assigned, and the incentives that they provide for conservation or depletion. In addressing resource degradation at the local level, it is also useful to understand the nature of property and authority systems. The failure to differentiate between the different 'resource regimes' has often led to the confusion between common property resources and open access resources. This failure is apparent in the inappropriate policies that are often based on this confusion (Gibbs and Bromley, 1989; Ostrom, 1990).

Generally, natural resources can be held under any one of the four 'resource management regimes'. These are Communal Property or Common Property, State Property, Private Property and Open Access (Bromley and Cernea, 1989; IFAD, 1995).

### 2.3.1 COMMON PROPERTY REGIME

A common property regime represents a management system with its own authority mechanisms and ability to enforce operating rules (Bromley and Cernea, 1989). Under a common property regime, 'use rights' for the resource are controlled by an identifiable group and are not privately owned or managed by governments (Murphree, 1991; Hasler, 1996). Groups hold customary ownership of natural resources such as grazing land and water sources (Bromley and Cernea, 1989). Groups of resource users also practice traditional management systems to sustain productive use of their natural resources. Although the property-owning groups may vary in size and structure, *"they are social units with definite membership and boundaries, with certain common interests, with at least some interaction among members, with some common cultural norms, and often their own endogenous authority systems"* (Bromley and Cernea, 1989, p.15). There exist rules concerning who may use the resource, who is excluded from the resource and how the resource should be used. Thus, pragmatically this is a management 'regime' with rules on access to, or exclusion from proprietorship of natural resources (Hasler, 1996). The greatest advantage of this 'regime' as observed by various authors is that there is secure tenure which allows communities to have collective rights over land, resources and their benefits.

Although enforcement is often difficult, a viable common property regime will usually have an in-built structure of economic and non-economic incentives that encourage compliance with existing conventions and institutions (Bromley and Cernea, 1989; IFAD, 1995).

One of the well known examples of such a 'regime' in southern Africa is the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe. The CAMPFIRE is an attempt by Zimbabwean Government to devolve responsibility and

benefits of wildlife through locally-based wildlife utilisation community property regimes (Hasler, 1996). The 1982 amendment of the Zimbabwean Parks and Wildlife Act of 1975 conferred privileges and rights on occupiers of communal lands as custodians of wildlife. The 1982 amendment was a departure from the former state controlled approach to wildlife management. The Act was based on the principle that efficient and sustainable wildlife utilisation was likely to be enhanced by local proprietorship. Proprietorship for wildlife was given to district councils to exercise on behalf of the communities. According to the 1982 Act, district councils are legally in a position to enter into joint ventures or other economic undertakings for the benefit of their constituents (Thomas, 1991; Hasler, 1996).

Although, the CAMPFIRE is neither without limitations (for example, with some district councils not genuinely promoting proprietorial devolution to producer communities) nor is it a panacea to resource conservation in rural Africa, it has achieved discernible results. These include: a re-awakened appreciation of wildlife; poaching has been drastically reduced; increase in household revenues; improvement of habitats; the use of wildlife revenues for food security in times of drought and emergence of local environmental management structures (Murphree, 1994). The CAMPFIRE has demonstrated the following aspects:

- where proprietorship of common resources is given to local communities, they can improve their livelihood in flexible and adaptive ways
- communal management of natural resources can act as a powerful catalyst for communal institutional development and,
- where local communities have secure tenure, sustainable use of the resource is enhanced (Murphree, 1994).

When a common property regime becomes dysfunctional due to external pressures beyond the control of the group, or for whatever reason, then management of the resource cannot be exercised any longer. Under these conditions common property degenerates into open access and therefore resource degradation occurs.

Various authors indicate that irrespective of the different natural systems (be it wildlife, water, fisheries, etc.) in which a common property regime functions, its success depends on

the following key conditions: social stability of the resource users; clearly defined boundaries of the resource and of resource users; presence of agreed rules by the user group and incentives to users. Each of these conditions is presented below.

### **Social stability**

While property managing groups may vary in nature, size and internal structure, they should be social units with definite membership and boundaries and with certain common interests. Heterogeneity of interests within user groups presents potential difficulties (Lawry, 1990).

There should at least be some interaction among members, with some common cultural norms and with their own endogenous authority systems such as tribal groups or extended families. It is important that individuals see themselves as members of one community (Ostrom, 1990; Thomas, 1991). Management authority should be vested in the respective group or its leaders. The group must recognise that they share dependence on the resource. To function effectively as a management 'regime', agreement on rules and guidelines for resource use is also required, and this is enhanced by cultural homogeneity and shared value systems (Ostrom, 1990). For institutional arrangements to be effective and to have long-term stability, all members of the group must have a voice in decision making and rule enforcement (Cousins, 1995).

### **Clearly defined boundaries**

One important characteristic of a common property regime is that individuals or households who have rights to use the resource must be clearly defined, as must the boundaries of the resource itself (Ostrom, 1990).

Without defining the boundaries of the resource and closing it to 'outsiders', local users face the risk that any benefits they produce by their efforts will be reaped by others who have not contributed to those efforts. At worst, the actions of others could destroy the resource itself (Ostrom, 1990).

### **Legal and institutional issues**

A functioning common property regime is one where members of the group are subject to mutually agreed rules accepted by all members of the group. There should be mechanisms for dealing with deviant behaviour and resolving conflicts amongst the users (IFAD, 1995). In the long-run, such rules will work, provided external government officials recognise their legitimacy (Ostrom, 1990).

Enforcement of the rules may be a problem, but in a social setting where conformity is the dominant ethic, it is likely to be acceptable (Bromley and Cernea, 1989). It is also important that it is decided: where the control rests, whether it is vested in a village committee, households or elders; how disputes are to be settled and how sanctions will be imposed (Thomas, 1991). In this regard, a common property regime may need the support of government in the form of legislation.

### **Incentives to the users**

Collective action is more likely to result where the common resource is critical to local incomes and is scarce (Lawry, 1990). Rarely are both these conditions present. If common property institutions are more likely to be effective where the resource is of critical economic importance to local users, then the prospects for bringing resources of relatively low economic value under improved common property management cannot be good (Lawry, 1990).

A related issue worthy of consideration is that, collective action will be more difficult to achieve where interest in the resource as a source of income varies, or where resource use strategies differ significantly (Lawry, 1990). An example of a range management project in Lesotho illustrates this factor. A USAID funded project established an elected grazing association committee to manage control over a badly degraded watershed. One of the problems that the project encountered was that due to reliance of villagers upon external sources of income, in this case remittances from mine workers in South African mines, there was lack of interest by many in intensifying resource management. Dependence of

rural communities on external sources of income is not a feature unique to Lesotho (Lawry, 1990).

### **2.3.2 STATE PROPERTY REGIME**

In a state property regime, control and management of the use of a resource rests with the state. In many cases the state decides who has access and how access will be controlled, for example by issuing licences or permits during closed seasons (Berkes and Farvar, 1989). Individuals and groups may be able to make use of the natural resources, but only at the forbearance of the administrative agency charged with carrying out the wishes of the larger community (Bromley and Cernea, 1989; IFAD, 1995). Examples of a state property regime include state forests, national parks, fisheries and wildlife resources. The state may either directly control and manage the use of natural resources through government agencies, or it may lease the natural resources to groups or individuals who are given rights to harvest these resources for a certain period of time. A state property regime removes managerial discretion from the user and generally conveys no long-term expectations concerning tenure security. To be successful such a regime requires adequate human, financial and material resources. Often these resources are limited in most developing countries (IFAD, 1995).

### **2.3.3 PRIVATE PROPERTY REGIME**

A private property regime is defined as a regime where the claim rests with the owner or a corporate body (Hasler, 1996). It gives the private owner the legal and social sanction to exclude others. An individual or few people are free to use and manage the resource as they wish. However, government may have legislation controlling use and access to these resources such as setting hunting quotas for wildlife or in cases of fishing, determining quotas during the closed season.

It is argued that the benefits that emanate from the private control of land and related natural resources arise from the fact that the individual or group can make management decisions and investments in the full knowledge that good stewardship will return private

rewards (IFAD, 1995). One of the assumptions of this statement is that the owner chooses to manage the resource well and produce those items that are of value to society. A private property regime also appears to be stable and adaptive because it has the social and legal sanction to exclude excess population and to resist unwanted intrusions. A private property regime is similar to a common property regime in the sense that there is exclusion of non-owners.

However, to suggest that the private property regimes are necessarily appropriate for all natural resources would be a mistake. For example, most of the world's landlessness, particularly in Latin America can be attributed to concentration of land in the hands of a few powerful families (Bromley and Cernea, 1989). Under the private property regimes therefore, poorer sections of the society can be marginalised and their poverty further perpetuated. When privatisation is recommended to address resource degradation, such a solution may be too simplistic, as it ignores the broader socio-economic implications of privatisation (Bromley and Cernea, 1989).

#### 2.3.4 OPEN ACCESS REGIME

Open access has been described as a condition of 'free for all' (Berkes and Farvar, 1989). Murphree (1991) suggests that open access is not strictly a 'property-rights regime' nor is it a 'management regime' since people use the resources opportunistically but do not manage them. He makes a distinction between open access and a common property regime. Under a common property regime, 'use-rights' for the resource are controlled by an identifiable group and are not privately owned or managed by governments; there exist rules concerning who may use the resource; who is excluded from the resource and how the resource is to be used.

Resource 'use rights' under open access are neither exclusive nor transferable. These rights are owned in common, but are open to access by everyone and therefore property of no one. Open access results from the absence of enforcement of rules concerning use of the resources, or the breakdown of a management system and authority system whose aim was to introduce and enforce rules among participants with respect to the use of a natural

resource (Bromley and Cernea, 1989). For example, government may introduce new policies and management systems which interfere with functions of existing traditional rules regarding resource use and access, thereby leading to the breakdown of the long established approaches to resource management.

Open access allows individuals to make use of scarce resources without regard for the future use of the resource and interests of others who may seek to use the same resource. Because there are no obligations to others, individuals are supposed to enjoy privilege. In short, an open access regime is a system of no law (Bromley and Cernea, 1989).

### **2.3.5 IMPLICATIONS OF RESOURCE REGIMES FOR LOCAL-LEVEL MANAGEMENT**

The subject of 'resource regimes' is complex and is dependent on different variables existing in a particular situation (Murphree, 1991). For example, the nature of a particular resource whether it is confined to a particular micro-environment such as trees, or whether it is mobile such as wildlife, may determine which 'regime' would be more appropriate (Murphree, 1991). Furthermore, the socio-political context under which the resource is being managed will also determine which 'regime' is most appropriate. The situation is further complicated by the fact that, in practice, natural resources are rarely managed solely within one of these regimes. Due to the nature of the resource, a combination of 'property rights' may have to be exercised. For example, wildlife could be managed by the communities with the state providing necessary legislative support to ensure that communities directly derive the benefits from the resource.

Serious shortcomings have been identified in the history of the debates around common property resources. Debates on security of tenure of natural resources have largely been restricted to a discussion of the relative merits of the state or private property regimes, ignoring the further option of a communal property regime (Murphree, 1991). Proponents of privatised natural resource management have suggested that market dynamics coupled with long-term security of tenure provide the best ingredients for sustainable utilisation and efficient management. Proponents of state management usually rest their case on equity considerations or collective societal interest in common property resources. The existence

of common property management is often excluded and its potential for sustainable use ignored (Lawry, 1990).

The relative merits and weaknesses of the different 'resource regimes' will be considered in this section in order to illustrate their implications for local-level management. This section specifically identifies some of the advantages of a common property regime over other resource regimes, and briefly discusses each of the advantages. These are: provision of security of tenure of resources for the communities; efficiency in management of natural resources; ensuring equity and ensuring economic and ecological sustainability.

### **Security of tenure**

Contrary to the private and state property regimes where communities are not assured of secure tenure, or it is only vested in an individual or corporate body, a common property regime has an assurance of security of tenure of the resources to the communities. Where a common property regime functions and there is proprietorship of the natural resources concerned, the communities have security of tenure of the resources and should therefore be motivated to manage their resources sustainably (Murphree, 1994). Proprietorship in this sense is used to mean a sanctioned use-right, including the right to decide whether to use the resources at all, the right to determine the mode and extent of their use and the right to benefit fully from their exploitation in the way they choose.

The example of the CAMPFIRE illustrates that when communities are supported by good enabling legislation and are free from bureaucratic restraints, they will assume responsibility for their environment. Without security of tenure it is unlikely that communities will invest in an uncertain future. Any resource regime that fails to fulfil this essential principle stands fewer chances of achieving sustainable use of resources at the local level (Murphree, 1994).

### Efficiency in management of natural resources

While the private and the state management regimes may be appropriate for given resources in given contexts, both have their weaknesses, particularly if they are underfunded, large-scale and managerially distanced from the resources in question. In such circumstances, the state or the private owner purports to be the manager, but the *de facto* use and management are in the hands of people living with the resources concerned (Murphree, 1991).

Neither the state nor the market have been successful in enabling individuals to sustain long-term productive use of natural resource systems. For example, an increase of government authority for management of local natural resources such as forests in developing countries has weakened local customary regimes and in most cases resulted in depletion of these resources (IFAD, 1995). Central authorities neither have sufficient time nor resources to enforce appropriate fines in order to induce co-operative behaviour. Communities on the other hand have relied on institutions resembling neither the state nor the market to govern some resource systems with reasonable degrees of success over long periods of time (Ostrom, 1990; IFAD, 1995).

In most developing countries, the state property regimes are examples of the state's reach exceeding its grasp (Bromley and Cernea, 1989). Many states have taken on far more resource management than they can be expected to carry out effectively (Bromley and Cernea, 1989). Under such circumstances, state property becomes open access for all, and resource degradation occurs. An example of a state property regime which failed in Nepal is given by IFAD (1995). In 1957 Nepal's village forests were nationalised. The Government of Nepal converted a common property regime administered at the village level into a state property regime. Through lack of management capacity, the situation developed more into an open access regime, and forests which had been sustainably managed over a number of years were quickly depleted.

## **Equity**

Under certain conditions where the state has taken control of resources such as forests, the consequence is that nationalisation creates *de-facto* open access to resources where limited-access common property resources had previously existed. While private and public forms of management may be efficient in some sectors such as industries, this does not apply to management of common property resources for which some potential beneficiaries cannot be excluded. Privatisation of commonly used resources for example, may mean assigning exclusive rights to one individual or firm thereby excluding the majority of people who depend on such a resource (Bromley and Cernea, 1989).

Focus on the private and the state property regimes in certain conditions ignores the potential for cost-effective collective local management enforced by informal peer pressure and drawing on evolved and detailed knowledge of local ecological dynamics (Murphree, 1991). Within a common property regime, the rights of individuals could be defined and limited to prevent overuse of the common resource. The needs of poor and small-scale users under a common property regime are likely to be met. If all follow the rules, resources will be allocated more predictably, efficiently and equitably (Lawry, 1990; Cousins, 1995). Conflict levels will be reduced and the resource system itself will be sustained over time (Ostrom, 1990).

## **Economic efficiency and ecological sustainability**

The common property regimes in certain conditions have also proved economically efficient and ecologically sustainable (Cousins, 1995). This does not imply that problems of resource management cannot arise, but they have particular advantages which do not exist under the state or the private property regimes.

Administration of the rights and duties under any regime has some transaction costs, be it costs of obtaining information, contracting agreements or enforcing rights and duties. However, under the common property regimes such costs can be significantly lower than under the private property regimes. The latter involve high social costs for recording,

adjudication and policing of titles, which rural resource users in marginal environments cannot usually bear and are often beyond the budget of a village economy (Cousins, 1995). While the application of the common property regimes also bear some costs, but there are fewer claims involved. Existing local and customary institutions can more easily enforce rights and duties without cumbersome and prohibitive legal procedures, and yet achieving fairness (Cousins, 1995).

Where livestock production is a central component of livelihood systems, the common property regimes have some ecological advantages. In arid and semi-arid environments which require a great deal of mobility, the common property regimes allow flexible but coordinated arrangements by groups of herders and yet still provide security of tenure (Lawry, 1990; Cousins, 1993).

In rural Africa, the common property regimes provide needed levels of assurance for most poor people who live in conditions of poverty, natural resource dependence and other uncertainties (IFAD, 1995). They offer reduced environmental risk and are therefore appropriate for these high risk marginal environments (IFAD, 1995 citing Runge, 1986; Scoones, 1996).

Berkes and Farvar (1989) describe the common property regimes as conservative and yet ecologically sustainable. The emphasis is on taking what is needed, and there are in-built rules and sanctions against excessive individual gain from a communal resource and against accumulation of surplus. Because the traditional use and management of resources often *“incorporates rituals to help synchronise harvesting with natural cycles, the common property regimes serve to sustain productivity of resources through generations”* (Berkes and Farvar, 1989, p.12).

## 2.4 CONCLUSION

This chapter has argued that the common property regimes provide fundamental advantages over other resource regimes. The common property regimes can provide: security of tenure to the resource users; equity amongst the resource users and economic

efficiency and ecological sustainability, particularly in high risk marginal environments. However, given the complexity of situations and variability of resources, combinations of a common property, private or state regime may be necessary. The common property regimes may need to be co-ordinated with other regimes, because in reality few resources are ever managed under one regime.

The CAMPFIRE in Zimbabwe has demonstrated that the common property regimes can act as powerful catalysts for development of local-level institutions and community participation in resource management, in particular where such a resource has high revenue generating potential and is central to community development (Murphree, 1994). The CAMPFIRE experience also illustrates that local-level or community-based institutions can become effective organisations for sustainable resource management, but only if the state devolves authority and decision making powers to the resource users. Thus, genuine devolution of decision making and management powers to communities and local-level institutions is fundamental to the success of the common property regimes. Chapter 3 discusses the concept of devolution and local-level institutions in detail.

The success of the common property regimes moreover is dependent on the presence of the following conditions:

- social stability of the user groups
- clearly defined boundaries of the resource
- clearly specified rules and guidelines, including enforcement, and conflict resolution mechanisms amongst the users
- the common resource must be scarce and critical to local incomes and of high revenue generating potential
- group membership must be small in size in order to be able to enforce conformity to rules through peer pressure and,
- government must support local institutions through legislation so that rules can be effectively enforced.

However, not all the conditions are of high significance in determining the success of a common property regime. Table 2.1 evaluates these conditions in terms of their significance. The conditions rated as highly significant will be taken forward and used as the criteria for the evaluation of the case-study in Chapter 6.

**Table 2.1: Evaluation of the conditions necessary for the success of a common property regime**

Condition	Rating	Comments
Security of tenure	High significance	Local communities must have security of tenure of the resource, and must be able to control use of and access to the resource. Security of tenure is a key condition to the success of a common property regime.
Genuine devolution	High significance	When users of the resource do not have decision making powers, they will not have a sense of responsibility for management of such a resource. Devolution of decision making powers is essential.
Social stability of the user groups	High significance	If the resource users are to take responsibility for management of the resource, they must see themselves as a homogenous community with similar problems and interests.
Clearly defined boundaries of the resource	High significance	If the resource is open to 'outsiders', there will be no incentive for local resource users to take responsibility for management.
Clearly specified rules and guidelines	High significance	Without clearly specified rules and guidelines, enforcement of regulations regarding resource use becomes difficult.
Scarcity of the resource and of high revenue generating potential	High to medium significance	Rarely are both these conditions applicable to most resources. For example, water as compared to wildlife does not have a high revenue generating potential and therefore the resource users may not give priority to its management.
Small group membership	Medium significance	Although the smaller the size of the resource users is, the more manageable it is, group membership may not be a major constraint if there are clear rules and guidelines on how the resource is to be used and these rules are enforced.
Government legislation	High significance	Government by enacting legislation can support enforcement of rules by the resource users, and can devolve decision making powers to local resource users.

## CHAPTER THREE

### 3. THE ROLE OF LOCAL INSTITUTIONS IN NATURAL RESOURCE MANAGEMENT

#### 3.1 INTRODUCTION

Over the past two decades there has evolved a new direction in the theory of environmental management which challenges the centrist mode of policy formulation and implementation (Murphree, 1994). This thinking advocates a shift in policy formulation and environmental management away from the central governments closer to the local communities and local institutions (Murphree, 1994). Policy-makers concerned with relationships between development and natural resource management have sought ways to promote better local-level management of resources used in common such as grazing land, water, forests, wildlife and biological resources. Murphree (1994, p.5 citing Low, 1993:3) quotes:

*“While the planetary vision is compelling, and some problems such as ozone depletion and greenhouse gases must be addressed via global agreements, there is an emerging consensus that solutions for sustainability must come at the local level, driven by new visions and values, and empowered with new institutions”.*

Due to this increasing interest by policy-makers in local-level management institutions, governments in different countries, particularly in developing countries have used pilot projects to test various models of local-level management (Lawry, 1990). Berkes and Farvar (1989) however, argue that perhaps the most important practical reason for governments to encourage local-level management institutions has been economic, because it makes economic sense to involve user-groups in management, especially where groups have proven their ability for self-management.

This chapter gives a background to the evolution of the concept of devolution of power to the local level. Attempts by different countries to increase participation in environmental management are then outlined. A brief synopsis of Agenda 21 is given to illustrate some of the initiatives being undertaken at an international level to facilitate involvement of local institutions in natural resource management and other developmental issues. As one of the prerequisites for achieving sustainable development, Agenda 21 stresses the need for broad

public participation of communities and their local-level institutions in the decision making process. As a response to the call for broad public participation in Agenda 21, some organisations such as the International Council for Local Environmental Initiatives (ICLEI) have undertaken initiatives which promote broad-based participation in environmental management. The last section of this chapter analyses the role and effectiveness of local-level institutions in natural resource management and highlights some factors that could affect their effectiveness.

### 3.2 DEFINITION OF DEVOLUTION

The term 'devolution' has been widely used in the context of policy formulation and implementation in both developed and developing countries. Attempts have been made to define devolution without a consensus of what it actually means (Johnson, 1994). Questions often raised when devolution is used include: devolving what; devolving to whom; what is the appropriate level of devolution; and how does policy define devolution (Murphree, 1994). In natural resource management, the meaning of devolution becomes even more critical as the question is, who has power to control and make decisions on how resources are used to serve both present and future generations?

Calvert (1975) considers devolution as a 'species' of participation and decentralisation. He describes devolution as distribution of power and functions of central government from the centre to other territorial units such as a region or locality. Devolution, according to Calvert (1975) is not static, but is a dynamic process. Sewell and O'Riordan (1976) also argue that devolution may vary from country to country, as well as from issue to issue. What is desirable and effective in one country may well prove unsuccessful in another country.

Given these perspectives, and if devolution is to be seen as a form or product of participation, some of the questions that become pertinent are: what is participation, who participates, why and how?

### 3.2.1 PUBLIC PARTICIPATION IN NATURAL RESOURCE MANAGEMENT

The basic rationale for public participation in natural resource management projects lies in the fact that 'top-down' government approaches have often failed (Catterson, 1988). Development projects implemented by governments with or without donor support have often attempted to apply shallow conceived technocratic solutions to poorly understood problems, and have in most cases degenerated into ineffective social welfare programmes (Catterson, 1988). The failure of this 'top-down' approach therefore led to the recognition for more public participation among those concerned with sustainable management of natural resources. However, despite wide support for participation, very little has actually been accomplished in achieving 'genuine' public participation, particularly in developing countries. Largely, this is explained by lack of clarity in meaning and consensus over what participation really entails (Johnson, 1994).

Debates in developed and developing countries over the past two decades have espoused the need for public participation (Potter, 1985). The overall approach has been referred to in a variety of terms, including 'bottom-up' planning, 'grass-roots' planning, 'public involvement' and other related terms (Potter, 1985). Although the term participation may be used world-wide, its meaning, role, function and importance vary from culture to culture and from political system to political system. The reasons for seeking more participation also vary depending on: the perspectives from which the subject is approached; the institutional; political and economic context; and the personal interests and points of view of those opposing as well as supporting participation (Wengert, 1976).

The term participation therefore, has different meanings and connotations depending on the situation to which it is applied, the ideology, motivation and practical orientations of the users. The reasons for seeking participation vary depending on the perspectives from which it is approached, the institutional, political and economic contexts. Participation can be used in the context of political decisions with respect to government structure and the importance of 'consent of the governed' as a prerequisite for development (Wengert, 1976). However, it can also be applied to activities such as administrative planning and day-to-day management of public agencies. Demands for more participation may also be motivated by a desire to alter the power structure in government (Swilling, 1988). In South

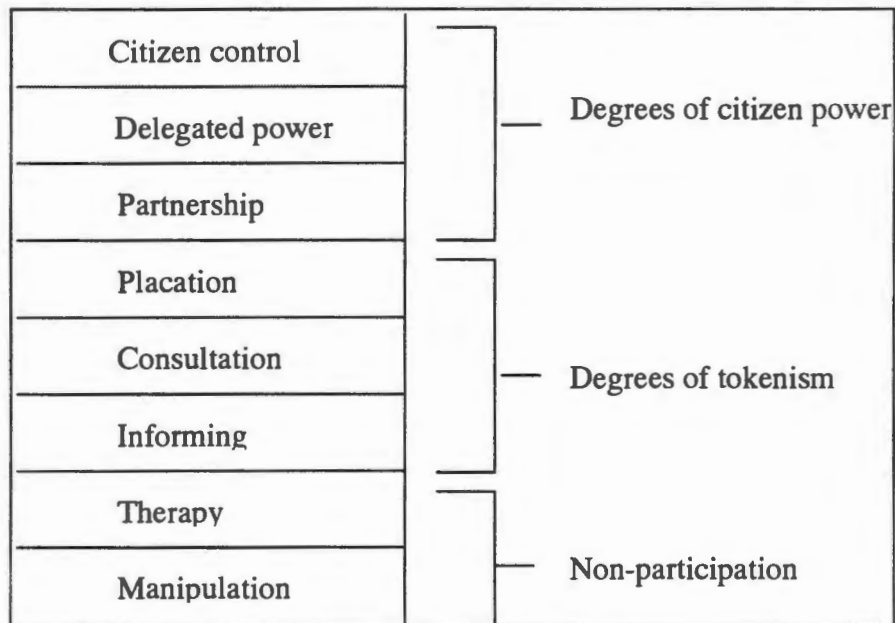
Africa, for example, devolution of power to the local level in the 1980's was seen as an important democratic mechanism that would act as a useful counter-weight to central government power that often had a tendency to deprive 'Black' people of the right to participate regularly in government (Swilling, 1988).

Due to this lack of clarity and consensus in definition, the meaning of participation has become vague. Johnson (1994, p.184 citing Lucas, 1976) comments:

*"One of the problems with defining participation is a lack of clarity and consensus over what it actually means or what it should achieve. Participation has come into vogue. It is on everybody's lips, but like many vogue words it is vague. Everybody wants it, but it is not clear what it is, and would be...."*

Different authors including Arnstein (1969) and Sewell and O'Riordan (1976) attempt to give a more specific definition of participation. They highlight that participation basically seeks a greater degree of power sharing through politicisation of the citizen's awareness of his or her potential role as a member of the community of interest in shaping the quality of the environment. In this context, participation is to be seen as part of an evolutionary process of societal change which aims at political and social egalitarianism. It is the redistribution of power that enables the powerless citizens presently excluded from the political and economic process to be deliberately included in the future. However, as emphasised by Arnstein (1969), participation without redistribution of power, is an empty and frustrating process for the powerless.

In order to clarify the confusion in analysis of participation, Arnstein (1969) developed a typology of eight levels of participation. Each level corresponds to the extent of citizen's power in determining the end product (see Figure 3.1). At the bottom of the ladder are 'manipulation' and 'therapy' which describe levels of non-participation that at times are contrived to substitute for genuine participation. At the top is 'citizen control' where once the powerless have full managerial power.



*Figure 3.1: Eight rungs on a ladder of citizen participation (Arnstein, 1969)*

Although application of this ladder has some shortcomings in the real world, it helps to illustrate that there are different gradations of citizen participation. It helps to understand the increasing demands for participation from those who do not hold power as well as confusing responses from the powerholders (Arnstein, 1969). For example, in a number of cases, people are often manipulated to endorse decisions of government, and this is distorted to imply their participation in the decision making process.

Despite these different variations in usage and interpretation, the definitions of participation have in common the philosophy of democracy, and that members of the public should have the opportunity to participate in the decision making process (Potter, 1985). This is most possible, and most likely, at a small scale and where community interest is high, or where such activities seem to impinge most closely on their daily activities (Sewell and O'Riordan, 1976). For example, it would be difficult to involve the public meaningfully in global or multinational environmental issues where the problems are complex, the geographical horizons wide and the degree of familiarity for any particular individual is very low (Sewell and O'Riordan, 1976; Potter, 1985).

Although in principle, public participation can be regarded as an essential ingredient for a true democratic government and a cornerstone to sustainable development, Potter (1985) cautions that its implementation and operation can be plagued by serious problems such as: lack of clarity of who should participate; whether the public knows what it is they want; dissatisfaction of participants because their expectations have not been fulfilled in the past, and other reasons. He therefore suggests that the role of public participation should not be seen in isolation, but in the wider social and political contexts, since these factors have a direct bearing on its success.

Within the debate to define participation, it has been acknowledged that participation is or can be facilitated by decentralisation. Although the term decentralisation has also been used to give different interpretations in different contexts, it has commonly been defined as the means of sharing power, usually of central government with other groups, each having authority within a specified area of the state (Mawhood, 1985). Groups in most cases imply units of local government in which formal decision making is primarily exercised by locally representative councillors or officials. In addition, amongst other features, such locally representative bodies should have power to hold land and property as their own and not belong to the government (Mawhood, 1985). Ultimately, the goal of decentralisation should be to gain effective achievement of locally selected goals (Kasfir, 1985).

From the foregoing, key phrases that emerge as common to the definition of devolution are power sharing, representation, decision making and distribution of power within society. Implicit in this broad definition, and in the context of this dissertation, is the empowerment of local people to control and manage their natural resources. For the purpose of this study, a broad definition of devolution which encompasses these different aspects and in particular emphasising the empowerment of local people to control and manage their resources, will be adopted.

### **3.2.2 OBJECTIVES OF PUBLIC PARTICIPATION**

Several authors including Sewell and O'Riordan (1976), Korten (1985), Potter (1985) and Picard et al.(1994) have discussed how over the past several decades, development

programmes in different sectors (whether in health, agriculture, education, water supply etc.) throughout the world have been designed in national and regional capitals with government personnel hired to serve some group of beneficiaries. Seldom did such programmes presume that the beneficiaries would themselves have any role beyond using the services provided.

As the weaknesses of this approach became increasingly evident to development professionals, there has been a tendency for donors to mandate local involvement and participation as a requirement of project implementation (Korten, 1985). Most governments faced with the inefficiency of centralised decision making, and in an attempt to stimulate the whole nation to participate in national development planning, have devolved structures of administration to either regional or district levels. At the local level, governments encouraged establishment of village councils or committees, in order to facilitate 'grass-roots' participation (Mawhood, 1985). However, as observed in most cases, there was never genuine devolution of decision making powers to the local level. Central control has been retained with little commitment to the political and administrative reforms that might ultimately lead to self-managing local structures (Korten, 1986). Moreover, decentralised structures were constrained by financial and human resource shortages (Korten, 1985).

### **3.2.3 LIMITATIONS OF CENTRALISED SERVICE DELIVERY**

Four key limitations of centralised service-delivery that have contributed to the interest and commitment by governments to people's participation in the planning and implementation of development efforts are: their limited reach; their inability to sustain necessary local level action; their limited adaptability to local circumstances and their creation of dependency (Korten, 1985). Each of these limitations is briefly discussed below.

#### **Limited reach**

It is nearly impossible for government funded and supervised professionals to reach effectively into every village, with the result that particularly in rural areas, few

governments services reach more than 15 to 20 percent of the rural residents who may be entitled to them (Korten, 1985). The government is neither able to provide the numbers of staff and facilities required nor to insure effective supervision of these services .

### **Lack of sustained local level action**

Development projects have often produced new facilities without adequate provision for their operation and maintenance. When implementation of projects is not accompanied by development of necessary skills amongst the local people, then maintenance of facilities is likely to deteriorate.

### **Limited adaptability to local circumstances**

Government services are commonly designed by central planners who have little familiarity with the actual needs of the people they intend to benefit. Furthermore, these needs may differ substantially from one community to another, although centrally designed programmes are seldom able to take such differences into account. Consequently there is a poor fit between the needs of a given community and the nature of the services offered, resulting in underutilisation and consequent waste of resources.

### **The creation of dependency**

The very ability of the poor to survive under the most unfavourable circumstances, suggests that they are quite skilled in meeting their own basic needs, even if only to standards intolerable to a socially conscious society. Too often government interventions seek to improve their lot not through interventions intended to strengthen their capacity for self-help action, but through doing for them what they did for themselves, with the government making decisions and providing the resources. As a consequence, people's former self-sufficiency turns to dependence on government, potentially leaving them even more vulnerable than before.

Potter (1985 citing Conyers, 1982) and Cousins (1995) outline three important reasons for encouraging public participation in planning and implementation of development programmes. Firstly, public participation acts as a means of gaining insights into local conditions and needs of local people. Secondly, it is logical to assume that individuals will be more committed to plans if they are involved in their preparation. Thirdly, there is a philosophical reason that decentralisation and empowerment are now seen as eminently feasible as well as ethically desirable.

However, the obstacles with which the development manager must contend in making participation a reality are nearly as formidable as the need for participation is compelling. Such obstacles may be found in the implementing agency, within the community itself and within the broader institutions of the society. Often many of these obstacles are ignored in programme design and management; hence many efforts to evoke public participation often fail (Korten, 1985).

### **3.3 EVOLUTION OF DEVOLUTION: A GLOBAL PERSPECTIVE**

Since the 1960's there have been dramatic changes in the role that the public may play in decisions relating to environmental management, with demands more intense in the United States and other industrialised countries such as Britain and Canada (Sewell and O'Riordan, 1976). These demands reflect major concerns. In most democratic societies, it is generally assumed that the individual has the right to be informed and consulted and to express views on matters that affect him/her personally. A second concern underlying pressures for greater power sharing has been the failure of past plans or policies to identify correctly the desires of the public (Sewell and O'Riordan, 1976).

Responses of different governments to the growing pressure for increased public participation have varied in nature and scope. Some governments have tried to effectively use existing institutions, while in some countries, responses have involved enacting new legislation, establishing new agencies, or expanding research and experimentation to find effective ways of involving the public (Sewell and O'Riordan, 1976).

In the United States, for example, three responses were adopted to respond to the increasing pressure for public participation and citizen involvement in environmental decisions (Sewell and O'Riordan, 1976). The first focused on more effective use of existing institutions. An agency such as the U.S. Army Corps of Engineers and pollution control bodies began to make more constructive use of public hearings through improved information programmes, less restrictive requirements relating to preparation of briefs for different kinds of development schemes and staging meetings at more convenient times and places. The second response within the U.S.A. was enactment of new legislation which made it mandatory that the views of the public be actively sought. The most influential piece of legislation was the National Environmental Policy Act of 1969 which requires full disclosure of possible environmental impacts of proposed federal policies and projects. A third step has been undertaking research and experiments to discover improved means of obtaining public participation (Potter, 1985). Simultaneously, federal agencies have taken the lead in broadening the basis of public involvement in resource management and environmental policy making. Several laws have been passed which either require or encourage public participation.

In the United Kingdom, as a response to criticism on lack of public participation in preparation of development plans, one of the significant steps taken was establishment of the Skeffington Committee in 1968 (Sewell and O'Riordan, 1976; Potter, 1985). One of the main tasks of the Committee was to suggest ways in which to foster greater public participation in the development planning process. Despite the criticisms that were made regarding some of the recommendations made by the Committee, its establishment marked an important step in the British planning system in terms of the role of the public in decision making (Sewell and O'Riordan, 1976).

In many developing countries and in particular in Africa, after independence the state was seen as a provider, intervening through state-owned and state-controlled enterprises or other means in virtually every area of economic and social life (Picard, et al, 1994).

Later in the 1980s, practitioners, donors and academics in Africa recognised that there was a need to decentralise and increase participation at all levels of society in order to improve

the quality of policies, increase commitment in the implementation of programmes and enhance the sustainability of policies. However, the nature of such participation remained unclear. In some cases, decentralisation and greater participation was seen as abdication of state responsibilities (Picard, et al., 1994).

Some of the early and most widely cited examples of public participation approaches in developing countries include the Ujamaa<sup>2</sup> programme in Tanzania and the Indian community-based development programme (Potter, 1985). According to Potter (1985 citing Conyers, 1982), the Indian community-based programme in the 1950's was perhaps the most successful. The scheme involved the establishment of local councils supported by teams of technical officers and multi-purpose community development officers at the village level (Potter, 1985). Although this programme has been criticised for doing little in reducing inequities that existed and affording limited involvement of the majority of the population, it however represented an attempt by which the public could participate in the development process.

As governments in developing countries and donors talked increasingly of shifting the rights to manage resources to local communities, project documents were prepared laying out policies and strategies that would enable people's participation in the design of projects and in managing their resources (Toulmin, 1991).

However, Toulmin (1991) indicates, there are still many questions about this process of shifting responsibility that have not been considered. These include:

- At what level is the community to be defined? The village, or group of villages, the herding camp, or herders' associations? Must new structures be set up or can control be vested in existing social organisations? Given the heterogeneous nature of communities, is there a representative body at the local level able which is able to manage and control access to resources fairly?
- If power to manage resources is vested in each village or herder's group, what support will they need from local government in terms of effective enforcement of their rights

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<sup>2</sup> Ujamaa is a Swahili word that means collective action.

and the technical support and skills required to make the most of these resources. Can local government provide this support?

- What rights should indigenous populations have to set the terms on which outsiders can obtain access to their land, water, trees and pasture. If indigenous populations do not have firm control over rights of access, what incentive do they have for investing in the careful management of these resources?

Toulmin (1991) argues that in most cases governments in developing countries have been pushed by donors to talk about greater participation by their populations in the development process and in the management of their own resources, while in reality, governments have made little progress in transferring real power away from the centre. The new 'conditionality' and pressure for multi-party democracy now coming from many bilateral funders are further recent trends in this direction (Toulmin, 1991). Where such devolution has taken place, according to this view, it is likely to be in cases where the state can divest itself from certain costly obligations, for example by transferring responsibility for maintenance of boreholes to pastoral associations, and by handing over the role of maintaining irrigation schemes to water user groups (Toulmin, 1991). In some Sudano-Sahelian countries in West Africa, governments have been uneasy about the notion of popular participation. Participation of rural people in decision making has been seen to constitute a new and potent threat to already tenuous political situations (Catterson, 1988).

Thus, while transferring rights and responsibilities to local people to manage their own resources is desirable, and may be an important step towards achievement of sustainable development, it is however pertinent that this is not done in isolation from other broader socio-political issues. Participation may also occur at different stages of project cycle, either in the planning, design, implementation or management. While ideally participation may be aimed for all these stages, in reality it is difficult to achieve, because each level has its own complexities (Kiss, 1993).

### 3.4 AGENDA 21 AND THE ROLE OF LOCAL INSTITUTIONS

Perhaps, one of the most remarkable events that occurred in this decade is the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992; commonly referred to as the Earth Summit. One of the principal outcomes of this Conference was adoption of Agenda 21.

Agenda 21 is the most comprehensive action plan for the 1990s and beyond, adopted by the international community (Robinson, 1993). Section 2 of Agenda 21 stresses that one of the fundamental prerequisites for the achievement of sustainable development is broad public participation in decision making, particularly those decisions that affect the communities directly (Robinson, 1993). Section 2 further emphasises that commitment and genuine involvement of all social groups will be critical to the effective implementation of the objectives, policies and mechanisms agreed by Governments in all programme areas of Agenda 21.

Chapter 28 of Agenda 21 gives special attention to support by international organisations and development partners to local institutions such as local authorities. The basis for this action is that local authorities and other locally-based institutions represent the levels of governance closest to the people, play a vital role in educating, mobilising and responding to the public to promote sustainable development and are crucial for turning policies into appropriate action (Robinson, 1993; Wynberg, 1993).

As a response to the call for support to local institutions in Agenda 21, initiatives have been undertaken by international organisations like the International Council for Local Environmental Initiatives. The ICLEI (1993) recognises that community sustainability cannot be imposed in a 'top-down' manner. If sustainable development is to be achieved, there is need for broad-based consultation and participation of all community members (ICLEI, 1993).

For this reason, ICLEI has designed Local Agenda 21, which is a campaign to mobilise local government leaders, community organisations and other local-based organisations to work together to create a strategic plan for their own community. Because the Local

Agenda 21 concept relies upon citizen involvement, Local Agenda 21 campaigns begin with an educational programme to inform local institutions about Agenda 21 and its implications for the local community. Local communities involved in the implementation of Local Agenda 21 need to determine their own priorities in solving environmental and development problems that they face (ICLEI, 1993).

This brief summary of Agenda 21 and some of the initiatives that are being put into action at an international level, illustrate the underlying assumption that, locally-based institutions know what issues are most critical to the sustainability of their communities. In a broader context, ICLEI (1993) views the support to local institutions as an attempt through which desired global results could be achieved.

### **3.5 LOCAL-LEVEL INSTITUTIONS AND THEIR ROLE AND EFFECTIVENESS IN NATURAL RESOURCE MANAGEMENT**

It is acknowledged that common property resources should be used sustainably (Berkes, and Farvar, 1989). However, a major question is how this objective can be achieved. Key questions to be addressed include: Should management of resources adopt a 'top-down' or 'bottom-up' approach? Should management be based on systems employed by developed countries, or should indigenous resource-management systems be adapted in managing resources and use existing traditional institutions? (Berkes, and Farvar, 1989).

There is an emphasis world-wide that local institutions and local communities should be integrated as key actors in defining and implementing development priorities. However, in some countries, it is only since the Earth Summit that involvement of local institutions and use of indigenous knowledge systems in management of natural resources has been given serious attention (Lalonde and Morin-Labatut, 1993).

In sub-Saharan Africa for example, numerous natural resource management projects have been implemented, but in many cases these projects have not had a lasting impact (Critchley and Reij, 1996). A major lesson drawn from these projects poor performance, is that beneficiaries were not sufficiently involved in the planning and design of projects that are intended to help them. The projects are usually designed by outside experts who do not

understand local conditions. Perceptions and priorities of land users, and presence of existing institutional structures are often ignored. As a consequence, most projects fail to achieve the desired results.

The current interest in local-level management institutions in natural resource management therefore, stems from the fact that local institutions have more information about the resources and problems at local level (Berkes, and Farvar, 1989). Any sustainable management practices therefore, have to utilise this potential. Korten (1986) argues that there are three reasons for which local-level of resource management is essential. Firstly, local management institutions and community-based resource management systems have unlimited potential to respond to the needs and preferences of their communities. Secondly, local institutions have potential to mobilise a variety of resources from communities to the extent that the costs of management can be far cheaper than where management is done by central institutions. Lastly, local institutions are more accountable to the people.

Evidence around the world has shown that, since time immemorial, people have accumulated knowledge about their natural environment and solving their day-to-day problems. Societies or communities whose livelihood depends on natural resources have managed these resources over millennia on a sustainable basis, hence the reason why some of these resources exist today (Berkes and Farvar, 1989). For example, in nomadic societies in the Middle East and Africa where the communities have kept their traditional range-management systems, they do better than those which have abandoned them due to external pressures. Similar success stories have been observed amongst fishing communities in West Africa and in Turkish coastal areas (Berkes and Farvar, 1989). The example of the CAMPFIRE which has already been referred to in Chapter 2, demonstrates the viability of devolving responsibility for management of natural resources to local institutions.

However, the introduction of inappropriate policies and legislation, such as nationalisation of natural resources previously managed by local communities, or privatisation of natural resources, have undermined these local institutions and their resource management systems

(Lalonde and Morin-Labatut, 1993; IFAD, 1995). By undermining local institutional structures and their management systems, sustainable traditional resource management strategies and the social fabric of local communities have either been weakened or eroded.

An example of the Barabaig pastoral nomadic community in northern Tanzania, cited by Lalonde and Morin-Labatut (1993), illustrates the plight of many societies in Africa, where new government policies and programmes have undermined existing local institutional structures and management systems, and the outcome has been severe resource degradation. Over the years, the Barabaig community had maintained the productivity of their land by practising a highly developed system of sustainable resource management suitable to the semi-arid conditions of the area. The land and the water resources were protected through a system that allowed the use and access of common land in a manner that would not denude it beyond recovery or deprive other users.

In 1968, a mission funded by Canadian International Development Agency identified the area of the Barabaig as 'idle', and therefore to be put to 'better use'. In 1970, the Government of Tanzania appropriated large tracts of land from the Barabaig in order to implement a large-scale foreign aid scheme - the Tanzania Canada Wheat Programme. The Barabaig were denied access to the area. As a result of mechanised monocropping of wheat, there was increased soil erosion and the overall carrying capacity of the land was overextended. The situation was worsened by the gradual breakdown of the Barabaig hierarchy of judicial institutions that controlled use of land, interpreted customary rules and adjudicated in conflicts over rights and duties.

Since the 1980's, in southern African countries such as Botswana, Zimbabwe, Zambia and Namibia, there has emerged a new set of principles and policies which represent a reversal of the old 'top-down' models for development and resource depletion, particularly in the management of wildlife (Steiner and Rihoy, 1995). Some of the reasons that triggered these reforms were:

- the threat of species extinction
- widespread poaching and loss of habitat
- the growing inability of states to protect wildlife resources

- human population growth and associated development needs fuelled conflicts between local communities and protected areas, and,
- participatory forms of planning and management had proven a success in development and thus suggested replication for wildlife management and probably other natural resources.

A key objective in these policies is that participation of local communities and community-based institutions in decision making and management of wildlife resources should be seen as the cornerstone to the sustainability of the resources (Steiner and Rihoy, 1995).

A review of the literature also suggests that there are different types of local institutions which should be considered in natural resource management. These are:

- local administrative agencies of government operating in a regulatory mode, setting policies and enforcing them by technical criteria
- local governments responsible to the community, but functioning within the state's formal legal framework
- membership organisations dealing with the resource and with associated productive activities in functionally specific ways to serve member's needs, operating by pooling member's economic resources, called co-operatives
- service organisations, working on a non-profit basis to protect or regulate natural resource use; private businesses, utilising resources according to calculations of profitability over time and according to established business practices
- private businesses utilising resources according to calculations of profitability over time and according to established business practices, and finally,
- use-management organisations carried out by individuals and households according to traditional community norms and personal understandings of the limits and possibilities of resource exploitation.

Each of these above mentioned institutions has advantages and disadvantages that need to be weighed in specific contexts (Uphoff, 1986 ). For example, government agencies may be more appropriate where there is conflict over the resource amongst different users.

In the context of rural Africa, use-management organisations have been recognised as important to the success of sustainable natural resource management. This is an option whereby the participants see their actions and the institutions they develop as indigenous, developed on a participatory basis by members of the community. Moreover, in use-management organisations, local communities are more homogeneous in interests and have the information and local knowledge about the resources (IFAD, 1995). However, use-management organisations, even with good leadership, cannot operate in isolation. They need to work with others of their kind, or be co-ordinated with some of those outlined above (Murphree, 1994). They also need to be linked vertically with other relevant institutions, especially central government agencies responsible for setting policies and providing human and financial support to such local institutions.

Simultaneously, the viability and effectiveness of a local institution will be determined by the different factors. These include: identifiable resources and resource users; assessment of costs and benefits of resource management and characteristics of the resource and of the users (Uphoff, 1986). These factors contribute to choosing or preferring different local institutional arrangements for the respective natural resource management tasks. A discussion of each of these factors is presented below.

### **Identifiable resources and resource users**

What kind of local institution will be effective and sustainable for natural resource management also depends on the composition of the community of resource users, in particular whether they constitute an identifiable community. It should be established whether the resource users have some established and effective authority structure whose legitimacy and structure is recognised and accepted. Where the resource and the users are more definite and identifiable, local institutions are more viable. Conversely, when the resource users are difficult to identify and there is great variability over time in availability of the resource, higher level institutions have a greater role to play in natural resource management.

### **Assessment of the costs and benefits of resource management**

An assessment of the costs and benefits of local natural resource management will vary according to the time span and the geographical area involved. Also affecting the assessment is the degree to which both costs and benefits are borne by the same persons. Four dimensions can be identified which can vary with respect to costs and benefits of resource management. These are:

-*Temporal dimension*, benefits accrue immediately or very soon, or accrue after a long time.

-*Spatial dimension*, benefits accrue locally or remotely.

-*Tangibility*, benefits are quite evident or are relatively hard to identify.

-*Distribution*, benefits accrue to the same persons who bear the costs of management, or to different persons from those who bear the costs of management.

This analysis thus presumes that managing natural resources has some cost, either in the form of direct investment of labour and funds or abstaining from some present use to preserve the resource over time. Local institutions will therefore be most effective where natural resource management benefits accrue quickly, locally, visibly and to those who bear the cost. In such circumstances, it pays for individuals and groups to take responsibility for a resource (Uphoff, 1986).

### **Characteristics of the resource**

The nature of the resource being managed will affect how desirable certain institutional options are. Three different characteristics are important to take into consideration. These are:

*Renewability*. The less renewable a resource is, the more risk there is that poor management will have drastic consequences, and the more reason central government's involvement may be more important.

*Seasonality*. The flow of local institutional activity is generally affected by variations in seasons. Whatever kinds of local institutions are charged with natural resource management responsibilities, under conditions of high seasonality they will need to operate with more flexibility and informality.

*Perceptions of resources.* How resources are perceived by users is an important consideration. If user groups are unable to exclude anybody from using a resource, they have little incentive to invest in its development or protection.

### **Characteristics of the users**

Characteristics of the users are also important in considering the viability of any local institutions. The following issues need to be taken cognisance of:

*Interdependence.* To the extent that the resource users are dependent upon one another for their livelihood system and even survival, the incentives for making local institutions work are greater.

*Homogeneity.* The tasks of local institutions in natural resource management are greatly simplified when users are homogeneous since decisions can be more uniform. Conflict over natural resource use is unlikely when users see themselves as unified by kinship, occupation or on some other basis.

*Tradition.* To introduce modern institutions that compete with traditional ones is usually unlikely to be successful. Local institutional development should build as much as possible on existing roles and responsibilities that support natural resource management.

### **3.6 CONCLUSION**

This chapter has highlighted that, although devolution of power to local institutions or communities, is in theory, applauded by everyone, it can be difficult to achieve in reality. In managing natural resources at the local level, governments must however, recognise that local institutions are key actors in managing the use of the resources. Governments therefore, should be willing to release power and control and give legal mandates to local institutions for resource management where conditions suggest that local-level management will be sustainable. Where there are existing traditional institutions, they should be strengthened rather than creating new structures.

Natural resource management policies and programmes should recognise existing traditional management systems. Policies and programmes which ignore existing practices,

contribute to erosion of sustainable traditional resource management strategies and weaken the social fabric of local communities. The indigenous knowledge systems should be utilised where appropriate, as they offer the most appropriate basis for identifying problems and devising solutions that are environmentally and socially sustainable.

There are different kinds of local institutions for resource management and the choice of institutional arrangements will depend on a variety of factors. The key factors are: identifiable resource and resource users; assessment of costs and benefits of resource management; characteristics of the resource and resource users. Effectiveness of any local institution in natural resource management will be determined by these factors. In addition, the nature of the resource may require a combination of different institutions, because in reality each institution does not work in isolation. To the extent that the resource and resource users are well known and identifiable, local institutions become viable. When availability of the resource is variable over time and resource users cannot be easily defined, higher level institutions have a greater role to play in natural resource management.

While these conditions are all important in determining the effectiveness of local-level institutions in natural resource management, they may not necessarily be applicable in different settings. Moreover, their significance will be determined by the nature of the resource and the local conditions. An evaluation of these conditions in terms of their significance in determining effective functioning of local-level institutions is made in Table 3.1.

**Table 3.1: Evaluation of the conditions necessary for the effective functioning local-level institutions**

Condition	Rating	Comments
Genuine devolution	High significance	Without decision making powers, local-level institutions will not take full responsibility for resource management , nor be held accountable for any failures.
Using existing traditional institutions	High significance	Traditional institutions are more familiar with local problems. They are usually regarded as 'legitimate' structures by local communities, and due to their closeness to communities, they can solicit community support for natural resource programmes.
Utilising indigenous management systems	High significance	Where communities feel indigenous knowledge has been ignored, they will not be committed to take responsibility for resource management.
Assessment of costs and benefits	High significance	Where the benefits of resource management are perceived to exceed the costs, resource users will be motivated to manage the resource.
Different institutions to be co-ordinated	High significance	Due to the complexity of issues to be considered in resource management, different institutions have to work together capitalising on their strengths and weaknesses.
Variability of the resource	High significance	Where the resource such as water is variable over time, local-level institutions functioning on their own may not be effective management institutions.
Resource users are well defined	High significance	If resource users are not well defined, local-level institutions without assistance of other institutions have limited chances of success.

The above table illustrates that all the conditions are of high significance in determining the effective functioning of local-level institutions. These conditions will therefore be taken forward and used as the criteria for the evaluation of the case-study in Chapter 6.

## CHAPTER FOUR

## **4. SOCIO-ECONOMIC DYNAMICS OF THE KHORIXAS REGIONAL CONSTITUENCY**

### **4.1 INTRODUCTION**

The Khorixas regional constituency in the southern Kunene region in Namibia, formerly part of northern Damaraland region comprises of communal land which prior to independence of Namibia in 1990 was administered by 'second-tier authorities' consisting of traditional leaders (Sullivan, 1996). These traditional leaders had powers to allocate and control use of resources such as grazing land and water. Traditional leaders were also responsible for resolution of conflicts within their communities (Rohde, 1993). Following independence of Namibia, the powers of these traditional leaders declined to that of intermediaries between government officials and communities (MPhil. Baseline Report, 1997). However, the former Damaraland region continues to maintain its strong social, economic and cultural character (Rohde, 1994). A description of the Khorixas regional constituency is given in Section 1.4.

Population of the Khorixas regional constituency has increased in the last twenty years, largely due to human migration into the constituency and natural increase (Rohde, 1994). In 1992 the population of the catchment area around Khorixas town was estimated at 4,000 people (MPhil. Baseline Report, 1997 citing Jones, 1995). This population growth coupled with ineffective state control puts pressure on the scarce resources such as water.

This chapter examines the socio-economic characteristics of communities in the Khorixas regional constituency and traditional resource management systems as they have evolved in the constituency and in the region. As a more in-depth analysis of the socio-economic characteristics and resource management in the Khorixas regional constituency has been covered in the MPhil. Baseline Report, 1997, this chapter will only highlight those issues which are relevant to this dissertation.

## 4.2 SOCIAL ORGANISATION AND MANAGEMENT OF RESOURCES IN THE KHORIXAS REGIONAL CONSTITUENCY

The archaeological records of the Damaraland region indicate that land use and resource management in this region were based on extensive mobility and flexible strategies in adaptation to environmental conditions of the area (Sullivan, 1996). This flexibility in resource management has continued to date. Social organisation in the former Damaraland region (which the Khorixas regional constituency forms part of) is highly adaptable, flexible and resilient, reflecting on the ecological conditions of the region (Rohde, 1994). Adaptability is manifested in reciprocal exchange networks amongst kin and neighbours who share resources and assist one another when necessary (MPhil. Baseline Report, 1997). Family members and communities manage the resources such as grazing land and water communally.

In this productively marginal environment, individuals, families and communities are able to over-come some major hazards by

*“actively negotiating between themselves, on an ad hoc basis, in an effort to extend survival strategies. Communal tenure in the region, is a dynamic system demonstrating the system’s overall strength by its ability to provide a large number of people access to scant resources”* (Rohde, 1993, p.2). *“When this system is disrupted by changes such as ill-conceived programmes and politically correct ‘bottom-up’ initiatives involving community participation, often relying on management structures, which fit neatly into a ‘western’ planning model, but take little account of existing social organisation and cultural attitudes, such development programmes and initiatives are all likely to be ineffective and to exacerbate existing problems”* (Rohde, 1994, p.1).

Thus, each family in the region cannot be viewed as an independent entity. Rather, families are inter-connected and share resources such as water, grazing land and even food when necessary (MPhil. Baseline Report, 1997).

### 4.3 ECONOMIC CHARACTERISTICS OF THE KHORIXAS REGIONAL CONSTITUENCY

Livestock farming is the main economic activity in the constituency providing cash and food for family needs. Lack of diversification of the local economy and shortage of alternative skills characterises much of the Khorixas regional constituency (MPhil. Baseline Report, 1997). Average cash return from livestock is about N\$1,200 per annum (Rohde, 1994). Culturally, large herd sizes are considered as a sign of social status within the community (MPhil. Baseline Report, 1997; Muruwoa, pers. comm., 1997). Any policies to reduce livestock numbers therefore have to take into account the importance of livestock as a source of income, form of food security and its cultural value (MPhil. Baseline Report, 1997).

Livestock farming however, is mostly subsistence and farmers have to supplement their cash incomes from other sources such as pensions (N\$135 per month), or support from family members and neighbours who work in nearby urban centres or some 'informal' activities (MPhil. Baseline Report, 1997). *"Many people live on the edge of survival relying on help from extended family and neighbours"* (Rohde, 1994, p.5). Pensions form a reliable source of income for the majority of households in the constituency and in the region.

Like in many other non-equilibrium<sup>3</sup> grazing systems, farmers in the Khorixas regional constituency practice herd mobility, tracking animals around when forage is not sufficient in their home area (Rohde, 1994). This flexible exchange of use rights is an advantage characteristic of most non-equilibrium environments in pastoral areas (Behnke, 1994). In resource management such flexibility allows animals to move around avoiding areas where forage is insufficient (Behnke, 1994). However, in the Khorixas regional constituency, the undefined rights of access and lack of control over communal resources lead to 'incursions' by 'outsiders', thereby putting pressure on the scarce resources (MPhil. Baseline Report, 1997) (see Plate 1).

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<sup>3</sup> Non-equilibrium describes those environments with highly dynamic ecosystems where populations or other components are not in the long-term balance with other elements of the system and are unpredictable. Non-equilibrium environments are typical of arid and semi-arid zones where rainfall variability is high.

Community profiles around the water points in the Khorixas regional constituency vary between settlements. People using a water point at any particular time are not necessarily related nor are they a homogenous group with common interests. One settlement could consist of pensioners, young adults who often migrate to urban centres for employment, young family members not in employment, herders, 'absentee' farmers who spend varying amounts of time on the farms or those employed in the formal sector in urban areas who return home over weekends or rarely visit (MPhil. Baseline Report, 1997). A fluid network of community exists. The settlers have moved in at different times and users of a water point include a wider network involving movement to and away from the settlement over time. This mobility of people is a function of the flexibility afforded by communal tenure for individuals to undertake a wide variety of economic strategies (Rohde, 1994). Within any farm settlement, it is also common to find extreme herd sizes within family groups (Rohde, 1994).

#### **4.4 LEADERSHIP STRUCTURES AND RESOURCE CONTROL IN THE KHORIXAS REGIONAL CONSTITUENCY**

Until independence of Namibia, communal areas were administered separately by the Statutory Legislative Council through 'second tier authorities' consisting of both recognised and State appointed traditional leaders and councillors (Hangula, 1995). Rights of access to land were negotiated on an informal basis and disputes were rarely taken above the level of ward leadership (Rohde, 1994; Hangula, 1995). Headmen often consulted their councillors and community before granting or denying rights of residence to an 'incomer' and membership to an ethnically defined community conveyed automatic rights to land (Rohde, 1994).

At independence, the laws which constituted the 'second tier authorities' were repealed and their powers removed (Rohde, 1994; Hangula, 1995). All property under the control of the Damara Authority reverted to the Government of Namibia. This included land and all water installations (Hangula, 1995). Headmen lost much of their 'official' status, and yet in the absence of a strong state control, they retained a strong role in land allocation and land disputes (Rohde, 1994). Theoretically therefore, the lack of strong state control over communal resources means that there prevails an open access regime over all communal resources such as grazing land and water (Rohde, 1994).

After independence, all property held by regional authorities reverted to the State (Sullivan, 1996). The former regional administration in Khorixas is now headed by central government appointees, and the position of tribal leaders is seen as largely symbolic (Sullivan, 1996). The role of traditional chiefs has been downgraded to that of intermediaries between communal dwellers and government officials (Rohde, 1994; Fuller and Turner, 1996). However, in practice headmen and councillors still fulfil important roles in terms of land allocation and land disputes (Rohde, 1994; Fuller and Turner, 1996). Although traditional chiefs and former councillors have lost their official status and power, they still have an important influence amongst communities (Rohde, 1994). Thus, in practice, although the role of traditional leaders has been downgraded to an advisory role, they still have an important influence amongst the communities who see them as their 'legitimate' representatives on any issues affecting the communities.

#### 4.5 CONCLUSION

A flexible and adaptable communal management system or common property regime in the former Damaraland region has enabled communal farmers to manage their resources sustainably in a productively marginal environment over centuries. This flexibility is inherent in the social organisation of the communal farmers in the constituency, whereby a reciprocal exchange system operates amongst the farmers. Farmers manage and share resources to assist one another when necessary. However, introduction of new policy changes without recognition of the strength of the existing social organisation and survival strategies may exacerbate rather than solve the problems in the constituency. Moreover, policy changes which introduce new resource management institutions excluding the potential role that can be played by traditional institutions are likely to fail. The challenge for any new interventions such as introduction of new government policies therefore, is how to facilitate sustainable management of resources in the constituency and in the region, while retaining this flexible management system which has generally enabled a large number of people access to scarce resources.

## CHAPTER FIVE

## **5. REVIEW OF THE RURAL WATER SUPPLY POLICY AND THE NATIONAL LAND POLICY IN NAMIBIA**

### **5.1 INTRODUCTION**

Following independence of Namibia, the Government of Namibia embarked on a restructuring of the public administration (National Planning Commission, 1995). A number of Government ministries and departments were restructured within the framework of the new Constitution of Namibia. Simultaneously, new policies were formulated which were aimed at meeting the challenges of an independent Namibia (National Planning Commission, 1995). The independent Namibia was to give priority to the needs of the rural communities who had been marginalised by the pre-independence policies (National Planning Commission, 1995).

Some of the policies which are relevant for this dissertation will be reviewed in this chapter. These are mainly, the Rural Water Supply Policy and the National Land Policy. Using the Khorixas regional constituency as a case study, this chapter will highlight some of the provisions in the Rural Water Supply Policy and the National Land Policy as regards management of land and water in communal areas and assess the implications of the policies to management of land and water in communal areas.

### **5.2 THE RURAL WATER SUPPLY POLICY**

With the restructuring of governmental services after independence, the Government of Namibia recognised the need to investigate the water and sanitation sector with the purpose of defining overall objectives and policies (Department of Water Affairs, 1993). As Government realised that only 50% of the rural population had access to a reliable source of water supply, emphasis was given to improving provision of rural water supply (National Planning Commission, 1995).

The Water and Sanitation Policy (WASP) was formulated and approved by Cabinet on 21 September, 1993 (Department of Water Affairs, 1993). Within the framework of the WASP, objectives were identified together with necessary legislative provisions. The Rural Water

Supply Policy was thereafter formulated. The Rural Water Supply Policy was accompanied by Strategy papers which spelt out mechanisms for implementation of the policy. With the adoption of the WASP, the Department of Water Affairs (DWA) was restructured (Department of Water Affairs, 1993). The restructured Department of Water Affairs was to concentrate on resource management and rural water supply, and the Directorate of Rural Water Supply (DRWS) was given the responsibility for rural water supply (Department of Water Affairs, 1993). A commercially oriented corporation, Namibia Water Corporation Ltd. was to be established for provision of bulk water (Department of Water Affairs, 1993).

The WASP defines the scope and expected services to be rendered within the water and sanitation sector. Furthermore, the WASP allocates responsibilities to the different actors and beneficiaries to be involved in the implementation of the policy. The specific water supply objective of the WASP is to supply water in sufficient quantities of acceptable quality from available sources on a sustainable basis, by utilising affordable means to meet the reasonable demands of the consumers (Department of Water Affairs, 1993). Water supply for human consumption has been given priority over other uses such as water for livestock farming and economic activities like mining and industries (Department of Water Affairs, 1993; Dewdney, 1996).

The WASP adopted the following guiding principles:

- Essential water supply and sanitation services should become available to all Namibians and be accessible at a cost which is affordable to the country as a whole.
- Equitable improvement of services should be achieved by the combined efforts of the Government and the beneficiaries based on community involvement and community participation.
- Beneficiaries should contribute towards the cost of the services.
- Communities should have the right, within the framework of resources available, to determine which solutions and service levels are acceptable to them.
- An enabling environment should be promoted to encourage the involvement and participation of both the private sector and support organisations.
- Environmentally sustainable development and utilisation of the water sources should be pursued.

- Overall sustainability of the water and sanitation sector will depend on the ability of the sector to become self-sufficient, by at least covering running and maintenance costs (Department of Water Affairs, 1993).

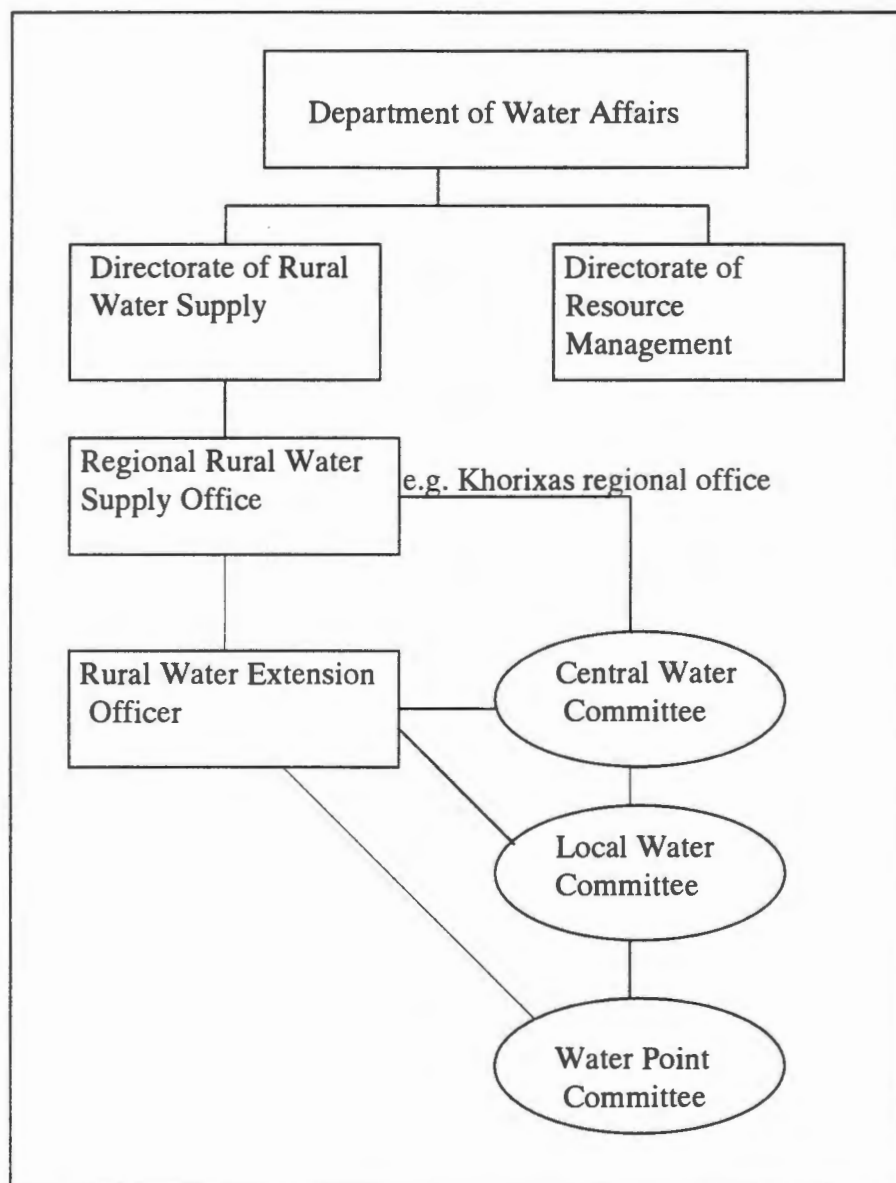
Based on the principles of the WASP, the Rural Water Supply Policy was formulated and adopted the following guidelines:

- An agreement between the community and government authorities setting out the respective responsibilities and commitments with respect to community involvement and participation should be a prerequisite for government support.
- Payment by the community should as a general rule cover operation and maintenance costs.
- Given the great variations in conditions throughout Namibia, a system should be worked out whereby the ability of each community to pay for services rendered can be evaluated and the need for subsidisation quantified.
- Government support should be reconsidered if stipulated conditions of the agreement are not complied with (Department of Water Affairs, 1993).

Taking cognisance of the shortcomings within the water sector, investigations sought to establish the most appropriate institutions that could give effective implementation of the WASP principles and improvements required in the sector (Department of Water Affairs, 1993). Participation of rural communities and local-level or community-based institutions was seen as one of most effective ways in which rural water supply could be managed on a sustainable basis (Department of Water Affairs, 1993). Communities in the rural areas were therefore to be encouraged to participate fully in the planning, construction, operation and management of their water supply.

Local-level institutions in the form of water committees were to be established at different levels country-wide to take overall responsibility of water points, most of which are boreholes (MPhil. Baseline Report, 1997). Each region would have a Central Water Committee (CWC) whose main function would be to stimulate development of rural water supply schemes and to co-ordinate activities of different Local Water Committees. Local Water Committees (LWC) would be in charge of water points within a defined geographical area and the Water Point

Committees (WPC) would be responsible for individual water points (DWA, 1994). Liaison between the Directorate of Rural Water Supply regional offices and the different water committees would be carried out by the Rural Water Extension Officers (RWEO) of the DRWS. A major role of the Rural Water Extension Officers would be to facilitate community participation and train water communities. The figure below shows the relationship between the DWA and the different structures involved in the management of rural water supply.



*Figure 5.1: Relationship between the DWA and water management structures in the rural areas (Adapted from Department of Water Affairs, 1993)*

One of the major tasks of the Central Water Committees is to decide on the order of priority of constructing water points in that region (DWA, 1996a). Local Water Committees are “to co-

*ordinate the activities of the Water Point Committees, and to represent their interests in an effective way to the outside world*" (DWA, 1994, p.S6/1). Local Water Committees are also expected to mobilise communities during the planning, design and construction stages of a project and to supervise the Water Point Committees activities after completion of a project. Local Water Committees also enter into an agreement with the Directorate of Rural Water Supply with regards to financial and technical responsibilities (DWA, 1994).

In order to ensure financial sustainability of the Rural Water Supply Policy, a cost recovery programme for water points is being introduced (Koch, pers. comm., 1997). For the first five years of policy implementation, communities will be required to pay for operation and maintenance costs of their water points, and for the next 15 years communities will be expected to pay for all costs including capital costs of the main infrastructure for the new and rehabilitation of existing water points (DWA, 1996a; Koch, pers. comm., 1997). The aim is that ultimately local communities should take full responsibility of their water points while Government plays the role of a facilitator (DWA, 1996a). The cost-recovery programme is to be implemented from 1 April, 1997 (Koch, pers. comm., 1997; Samupofu, pers. comm., 1997).

In preparation for the implementation of the Rural Water Supply Policy, the Directorate of Rural Water Supply has prepared a 5 Year Training Plan for support of community-based management of rural water supply starting from 1 April, 1997 to 31 March, 2002 (DWA, 1996b). The Plan includes training of the Rural Water Extension Officers and the Water Point Committees together with training of top and middle management staff within the DRWS (DWA, 1996b). In the Khorixas constituency however, training of the Water Point Committees and the Rural Water extension Officers had started earlier than the scheduled date (Samupofu, pers. comm., 1997).

Training of the Water Point Committees in the Khorixas constituency put emphasis on community-based operation and maintenance of water points and community-based financial management (MPhil. Baseline Report, 1997). However, community training by the Rural Water Extension Officers did not include education on environmental impacts of water points, although attempts were being made to co-ordinate provision of water points with the Ministry of Environment and Tourism and the Department of Agriculture and Rural Development (Samupofu, pers. comm., 1997). Generally, including in the Khorixas constituency, the DRWS

did not undertake any environmental investigation before drilling of boreholes. Instead, the DRWS conducted an 'Engineering Instinct Assessment' which was more of a technical feasibility and needs assessment study (Koch, pers. comm., 1997).

Overall, 5100 Water Point Committees, 120 Local Water Committees and 14 Central Water Committees country-wide have to be trained in order for the communities to be able to take over responsibility for the operation and management of all water points (DWA, 1996b).

The DRWS recognises that the Water Point Committees should be able to control use and access to the water points in order to keep out 'outsiders' who do not contribute to the upkeep of water points (DWA, 1994). To be able to perform this function, the Water Point Committees need to be legally constituted so as to have legal powers to enforce their decisions (Koch, pers. comm., 1997). However, the issue of giving legal status to the Water Point Committees had been opposed by the Office of the Attorney General on the basis that "*over-formal agreements will imply mistrust*" (DWA, 1994; p. S4/2; Koch, pers. comm., 1997). The advice from the Attorney General's office was that the status of the Water Point Committees should be allowed to evolve gradually. Although a new Water Bill was being drafted, there was uncertainty whether it would provide for the legal status of the Water Point Committees (Koch, pers. comm., 1997).

### **5.2.1 THE ROLE OF THE WATER POINT COMMITTEES IN THE KHORIXAS REGIONAL CONSTITUENCY**

Establishment of the Water Point Committees in the Khorixas regional constituency started in January 1995 (Samupofu, pers. comm., 1997). By 31 January, 1997 there were 114 committees in the constituency, while Local Water Committees had not yet been elected. The emphasis in the constituency was on establishing the Water Point Committees before election of the Local Water Committees (Samupofu, pers. comm., 1997).

Members of a Water Point Committee were elected by the community that used the water point (DWA, 1994). Membership of the Water Point Committees consisted of a Chairman, Secretary, Treasurer and a Caretaker. Depending on the size of the community, additional members could

be elected (Samupofu, pers. comm., 1997). According to the Rural Water Supply Policy, traditional leaders such as chiefs or headmen were not by virtue of their status members of the Water Point Committees unless they were elected by their communities (Samupofu, pers. comm., 1997). Some members of the community in the constituency were of the view that traditional chiefs should be permanent members of the Water Point Committees since they were still widely respected by communities and played an important role in land allocation issues and resolution of conflicts amongst communities (Samupofu and Muruwoa, pers. comm., 1997).

Functions of the Water Point Committees include:

- educating community members in the proper use of the water point
- creating awareness that community members are responsible for the water point
- providing rules for operation of the water point, and making sure that the rules are obeyed
- appointing and supervising a Caretaker who will be a special member of a Water Point Committee responsible for the operation and maintenance of a water point
- reporting repairs which are too difficult for the community to carry out to the respective Local Water Committee and the Rural Water Extension Officer
- addressing complaints of misuse and solving problems relating to water points
- keeping records of all income and expenditure, and,
- collecting money to pay for operation and maintenance costs (DWA, 1994).

The full terms of reference of the Local Water Committees and the Water Point Committees are given in Appendices 1 and 2.

The views about the role and structure of the Water Point Committees varied amongst different members of the communities in the Khorixas constituency. In some cases, local communities had only heard of the Water Point Committees but did not understand what their role was (MPhil. Baseline Report, 1997).

Generally, the main issues that emerged in various discussions during the field trip with either members of the community, community leaders, members of the Water Point Committees and some government officers about the new Rural Water Supply Policy included the following:

- Government did not explain clearly how the cost-recovery policy was to be implemented.

- There had not been enough consultation with the people to explain the provisions of the new policy and their implications to local communities. Two workshops had been held in the region which had been attended by some members of the Water Point Committees.
- Water Point Committees were not seen as 'meaningful' because in some cases only one family used the borehole, or members of the committees were not permanently based in one settlement as they had to move to other areas in search of grazing land.
- The borehole structures were expensive to maintain and communities would not afford to maintain them in future when the policy is implemented.
- Local communities had not been consulted in the siting of boreholes and therefore communities could not be expected to assume government's responsibility. Cases were cited where boreholes sited by government geohydrologists did not yield sufficient water to meet community needs, while boreholes sited by the local diviners were seen to be more successful in terms of yielding sufficient water for community needs. The communities felt that lack of knowledge on local conditions contributed to the failure of most boreholes (see Plate 2).
- Water Point Committees did not have any legal status and therefore it would be difficult to control and enforce rules and regulations on use of the boreholes. It was emphasised that, because communities could not exclude 'outsiders' who did not contribute to the upkeep of boreholes, management of water supply would be difficult.
- Management of the boreholes could not be addressed in isolation from land tenure issues in the communal areas. As long as there was no clear security of land tenure in the communal areas, communities considered that it would be difficult to control use of the boreholes by 'outsiders' (MPhil. Baseline Report, 1997). In December 1996, it was estimated that about 53% of users of water points in the Kunene region were 'outsiders' who did not seek permission from the resident communities or its leaders (SIAPAC, 1997).

A 'Wrap-up Workshop' was held on the 23rd to 26th October, 1996 in Outjo by the DRWS to solicit comments from members of the community about the Rural Water Supply Policy in the Kunene Region. The following issues and concerns were raised by representatives from the different regions, (including the Khorixas regional constituency):

- Government should go into partnership with communities in order to promote community development.

- Government must train all community members in borehole management.
- The activities of Government must be transparent at all times.
- The National Land Policy and security of tenure should be addressed before the cost-recovery programme is implemented.
- Water points should be in good condition before hand-over to communities.
- Traditional leaders should take a leading role in community development issues.
- Government should consult with traditional leaders and councillors before any development activities are implemented.
- Local communities must collect and manage funds themselves (DWA, 1996a).

The DRWS Khorixas regional office is required to play a leading role in facilitating implementation of the Rural Water Supply Policy in the South Kunene region. However, this office was constrained by a number of factors. These included lack of trained personnel, financial and material resources. The number of the Rural Water Extension Officers was far less than the number required in order to deliver the services to communities efficiently and effectively (Samupofu and Carstens, pers. comm., 1997). In February 1997, there were only 11 available posts for the Rural Water Extension Officers out of the total 21 posts required for the regional office to operate efficiently and effectively (Samupofu, pers. comm., 1997). Acute shortage of transport to enable the Rural Water Extension Officers to reach all communities was also cited as a major constraint. Prior to 1996, the DRWS Khorixas regional office had no input into the capital and running costs budget. The capital and running costs budgets for the Khorixas regional office and for other regional offices were prepared in Windhoek by senior management who were not familiar with the local conditions. Consequently, the regional offices operated under very limited financial constraints and could not effectively provide expected services to the communities (Samupofu, pers. comm., 1997).

### **5.3 THE NATIONAL LAND POLICY**

The distribution and management of land in Namibia is complex and is a result of former colonial policies which are inappropriate to Namibia today (Corbett and Daniels, 1996). As far back as 1892, the German colonial authority formulated the first land policy which demarcated the 'Crown lands' and the 'Native reserves' of South West Africa (Hangula, 1995). Land

formerly utilised by indigenous communities was dispossessed and set aside for European settlement as 'Crown lands', while the original owners were confined to the 'Native reserves' (Corbett and Daniels, 1996). The subsequent Proclamations and Regulations that were passed later in the 1960's by the South African Government to redefine 'Native nations' or 'Bantustans' sharpened the division between the white and black dominated areas in South West Africa (Corbett and Daniels, 1996). As a result there continues to be two distinct property regimes that have developed in isolation from each other, the commercial private property regimes which formerly belonged to white farmers and the communal state property regimes areas which were set aside for the use of black farmers (Hangula, 1995). Commercial farmers have the right to fence off their land to ensure minimal disruption to their land and other resources. Conversely in communal areas, farmers lack ownership rights of the natural resources, and this has been a disincentive to sustainable use and management of resources (MPhil. Baseline Report, 1997 citing Jones, 1993).

Prior to independence, allocation of land in communal areas was regulated by a series of traditional authorities or 'second tier authorities' set up by South African Government (MPhil. Baseline Report, 1997 citing Rohde, 1994). The traditional authorities had the powers to impose fines or penalties for the misuse or depletion of natural resources, and these control measures secured access of people to common resources and reduced resource depletion (Hangula, 1995).

After independence, all laws regulating these authorities were repealed. Communal land, together with water points and other natural resources came under control of central government (Rohde, 1994). With the State controlling use of all natural resources, traditional authorities were left insecure about their role in the newly independent Namibia, and many traditional leaders felt their powers had been eroded and were therefore powerless (Hangula, 1995). In some communal areas of Namibia, mismanagement of natural resources and land degradation originated with the insecurity that some communities felt regarding the status of their traditional authorities (Hangula, 1995). Since independence, because state policies have undermined the former traditional authorities and management system, and because of ineffective state controls, common resources such as water and grazing land are theoretically open and accessible to all communal residents (Rohde, 1994).

Efforts to redress the land problem in Namibia were initiated immediately after independence and were dominated by the Land Conference in 1991 (Harnett, 1993). The Conference culminated in a number of recommendations and resolutions. One of the most important recommendations was that the land question in Namibia had to be seriously addressed because it had a direct impact on government policies relating to the proposed cost-recovery programme for water supply, the establishment of wildlife conservancies, resettlement programmes and rangeland management (NANGOF, 1996). In January 1997, a Green Paper on the National Land Policy and the Communal Land Bill was published by the Ministry of Lands, Resettlement and Rehabilitation, and will be distributed country-wide for comments from different interest groups before a land policy for Namibia can be developed (Tjipueja, pers. comm., 1997).

### **5.3.1 PROVISIONS OF THE NATIONAL LAND POLICY WITH RESPECT TO COMMUNAL AREAS**

The draft National Land Policy (Section 18) provides for different forms of 'property rights' which will be accorded equal status, security and protection. These are customary grants, state ownership, leasehold, licences (certificates or permits) and freehold (Ministry of Lands, Resettlement and Rehabilitation, 1997). Land rights holders for the different 'property rights' will be individuals, families constituted as family trusts, duly constituted co-operatives, companies and the State (Ministry of Lands, Resettlement and Rehabilitation, 1997). In communal areas, all land belongs to the State, however multiple forms of land rights will be accorded to rural communities. These are state ownership, leasehold and customary grants (Ministry of Lands, Resettlement and Rehabilitation, 1997). These 'property rights' are discussed briefly in this section.

#### **State ownership**

The draft National Land Policy is based upon principles enunciated in the Constitution of Namibia (Ministry of Lands, Resettlement and Rehabilitation, 1997). Article 100 of the Constitution of Namibia, states that: "*Land, water and natural resources below and above the surface of the land....shall belong to the State if they are not otherwise lawfully owned*" (Harnett, 1993, p.6). 'Lawful ownership' means freehold title and State title (Ministry of Lands, Resettlement and Rehabilitation, 1997). In keeping with this principle, all communal land is

under control of the State. In communal areas, the powers of the State will be vested in Regional Land Boards which will execute their powers on behalf of the inhabitants (Government of Namibia, 1996). There will be one Regional Land Board in each region and later Local Land Boards are to be established for each rural constituency. Authority over rights which are currently exercised or held by traditional leaders or other customary authorities on behalf of communal residents will be transferred to Regional Land Boards. The Constitution further provides the right to all Namibians to settle where they choose within the country (Corbett and Daniels, 1996).

Persons designated as traditional leaders in terms of the Traditional Authorities Act may not be nominated to serve as members of Land Boards, but Regional Boards may appoint traditional authorities designated under Traditional Authorities Act to perform such duties as they may specify. Traditional authorities will be expected to assist Land Boards in resolution of disputes over land granted under customary law, and will play an advisory role to the State President on control and utilisation of communal land through the Council of Traditional Leaders which will be established in accordance with the Constitution (Ministry of Lands, Resettlement and Rehabilitation, 1997).

### **Leasehold**

Section 82 of the National Land Policy provides for any person to apply for a lease for a period of 30 to 50 years, primarily for business purposes. Such leases can be registrable, inheritable and mortgageable. A lease agreement cannot be granted in respect of land which is subject of customary right, except where such right is relinquished to the Land Board.

### **Customary grants**

Certificates of rights are to be introduced for customary uses such as residential use and subsistence farming. The certificate is not transferable, except with the consent of the Regional Land Board. Where people were issued with a 'Permission to Occupy' certificate on Government land, they will be required to apply to the Land Board of the region for conversion

of the title to new forms of tenure since the 'Permission to Occupy' certificates are to be phased out.

#### 5.4 CONCLUSION

The Government of Namibia recognises that one of the prerequisites for sustainable management of resources such as land and water is putting in place policies which address the key constraints facing the resource users. The Rural Water Supply Policy was formulated with the aim of improving the conditions of the rural population who had been marginalised by pre-independence policies. The guiding principles for the policy are embedded on the concepts of equity, affordability and overall sustainability. Community involvement and participation is also seen as a cornerstone to sustainable management of water resources, particularly in the rural areas. Water Point Committees are therefore being established to take responsibility of water points in the rural areas in order to manage water resources on a sustainable basis. A challenge for Namibia will therefore be how to translate this policy into practical and sustainable actions.

The National Land Policy also attempts to redress the land inequalities by improving access to land and tenure security for the majority of Namibians living in rural areas. The Land Conference in 1991 was a milestone in the history of the country in terms of addressing some of the major land problems in the country. A Green Paper on the National Land Policy provides for different 'property rights' in order to improve security of tenure for all the citizens of Namibia. However, a major consideration is whether the policy guarantees security of tenure of the natural resources such as water, land and others, particularly in communal areas. Without security of tenure of the resources, efforts for sustainable management of water resources as envisaged in the Rural Water Supply Policy will be difficult to achieve.

## CHAPTER SIX

## **6. TOWARDS AN EFFECTIVE LOCAL-LEVEL MANAGEMENT SYSTEM FOR WATER SUPPLY IN THE KHORIXAS REGIONAL CONSTITUENCY**

### **6.1 INTRODUCTION**

The Rural Water Supply Policy and the National Land Policy in Namibia were formulated with the view to improve Government's delivery of services to all Namibians. As a departure from the pre-independence approach of state management of social services, the Rural Water Supply Policy of 1993 promotes community-based management of rural water supply. Water Point Committees are being established country-wide to facilitate local-level management of water supply in rural areas. The National Land Policy proposes different forms of 'property rights' in the rural areas in order to improve access to land and provide security of tenure of land and other natural resources, particularly in communal areas.

This chapter analyses the extent to which the provisions of the Rural Water Supply Policy and the National Land Policy will facilitate or hamper effectiveness of Water Point Committees in the Khorixas constituency. Socio-economic conditions in the Khorixas constituency and their appropriateness for the effective functioning of the Water Point Committees will also be analysed. The chapter further considers the four attributes of sustainability and examines the extent to which there are adequate and effective mechanisms in place to translate policies into practicable and sustainable actions, thereby improving the effectiveness of the Water Point Committees. Effectiveness of the Water Point Committees in this context refers to the degree to which they are able to perform their tasks and responsibilities as spelled out in the Rural Water Supply Policy.

The conditions which are necessary to support the common property regimes and local-level management have been highlighted in Chapters 2 and 3, and have been evaluated in Tables 2.1 and 3.1. The conditions rated as of high significance have provided the basis for the criteria against which this analysis of the Water Point Committees is made. Those conditions that are closely related have been put together under one main criterion. Table 6.1 at the end of this

chapter provides a framework for analysis of the criteria. More specifically, this analysis focuses on the following criteria:

- the National Land Policy and security of tenure of the resource
- the Rural Water Supply Policy and achieving sustainability
- social organisation and social stability of the communities
- water as a resource and incentives to local communities
- new institutional structures as against traditional structures and indigenous management systems
- Water Point Committees and genuine devolution and,
- capacity building .

The criteria which have not been satisfactorily addressed in the implementation of policies will form the basis for the actions recommended in Chapter 7.

## **6.2 THE NATIONAL LAND POLICY AND SECURITY OF TENURE OF THE RESOURCE**

The Rural Water Supply Policy recognises the need for involvement and participation of local communities and the Water Point Committees in the management of rural water supply. Central government is to play a facilitating role by taking the responsibility for planning and design of rural water supply, while the Water Point Committees will be responsible for day-to-day management of their water points. Literature experience shows that in order for the Water Point Committees in the Khorixas constituency to manage their water resources sustainably, they must have secure tenure of the land and water. Without secure tenure, there will be no incentive to participate in water management efforts.

The National Land Policy however, does not guarantee secure tenure of land, water and other natural resources, particularly in communal areas like the Khorixas constituency. Under the National Land Policy, all natural resources are subject to a state property regime. In principle, this means that control on use of natural resources rests with the state rather than with the local communities.

Although it is not envisaged that the state could prohibit use of land and water resources by communities in the Khorixas constituency, state control over these resources does not guarantee tenure security to the Water Point Committees and the local communities. Under a state property regime, the Water Point Committees have no right in the decision making process that determines use or protection of water resources. As long as the control of land and water is vested in the state, communities in the Khorixas constituency and other communal areas are not guaranteed long-term access to and use of water resources, a key to sustainable water management. Without security of tenure of land and water, there will be no incentive for communities to manage water resources sustainably. Water Point Committees therefore, will be unable to get the commitment of communities in managing and maintaining water points over which they have no control.

While the National Land Policy makes provision for individual leasehold and customary grants for other land uses such as residential, commercial and subsistence farming, it does not provide an option for community tenure, particularly for water and other natural resources which are used communally. In contrast to the misconception that communal tenure results in open access, communal tenure is a system in which a defined group or community enjoys rights over a specific parcel of land and has rights of access to an area of common land that provides either grazing, water or other resources (Cousins, 1993). Communal tenure is a form of tenure that has evolved over centuries in the Damaraland region (which includes the Khorixas constituency). Communal management of common property resources is familiar to people in the Khorixas constituency, and more importantly, its flexibility has allowed a large number of people access to scarce resources which are vital to both their survival and their livestock (Cousins, 1993; Rohde, 1994). Communal tenure as one of the principal forms of tenure for water and other communally used resources would therefore be appropriate for conditions in the Khorixas constituency.

### **6.3 THE RURAL WATER SUPPLY POLICY AND ACHIEVING SUSTAINABILITY**

The term 'sustainability' has been used world-wide and open to a wide range of interpretations, and yet without a clear direction of how it is to be achieved (Jacobson et al., 1995; Hill and

Bowen, 1997). *“The divergence of opinions relating to the term prove that ‘sustainability’ is so broad that a single definition cannot adequately capture all the nuances of the concept”* (Hill and Bowen, 1997, p. 225). Despite these different definitions and interpretations, sustainability in general encompasses four key attributes. These are economic, social, ecological and technical sustainability (Hill and Bowen, 1997).

Namibia’s Constitution (Article 95 (1) in line with global trends for achievement of sustainable development states that:

*“The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:..maintenance of ecosystems,..and utilisation of natural resources for the benefit of all Namibians, both present and future...”*(Glazewski and Tarr, 1996, p.129).

It is considered a difficult task for policies to aim at achieving sustainable natural resource management (Jacobson et al., 1995). A critical examination of the implementation of the Rural Water Supply Policy in the Khorixas constituency indicates that mechanisms have not been put in place to ensure that the key attributes of sustainability, mainly, ecological, social, economic and technical sustainability are taken into consideration. Without consideration of these attributes of sustainability in the implementation of the Rural Water Supply Policy, it will therefore be difficult for sustainable water management to be achieved. These attributes of sustainability are discussed below:

### **Ecological sustainability**

Ecological sustainability implies that natural resources are used within the reproductive carrying capacity of the natural system (Jacobson et al., 1995). In the Khorixas constituency where the natural environment is very sensitive to any changes in water balance, ecological sustainability becomes a critical factor of any resource management strategy. Ecological sustainability of water points will require a management strategy that not only accounts for the quantity of water, but will predict the sustainable yield of the natural system to maintain the water. The increasing human and livestock population in the constituency further exacerbate the sensitivity of the natural ecosystem, and increasing pressure on land and water points may lead to irreversible environmental degradation (MPhil. Baseline Report, 1997) (see Plate 3).

While one of the principles of the Rural Water Supply Policy is that water sources should be utilised in an environmentally sustainable manner, ecological sustainability of water points did not feature as a key consideration in siting of the boreholes nor as a major component of community training by RWEOs. Generally, the borehole drilling programme in the Khorixas constituency and the rest of the Kunene region was undertaken without any environmental impact assessment and no investigations were done at each borehole to determine the potential environmental impacts. Communities and some decision makers in the Khorixas constituency did not fully understand the environmental implications of over-extraction of water or provision of water points in an arid area (MPhil. Baseline Report, 1997). The fact that providing water points in an arid area can lower the resilience of the environment to drought which can lead to irreversible environmental degradation, was not comprehensible to communities and some decision makers in the Khorixas constituency.

Given the sensitivity of the environment in the Khorixas constituency and similar arid areas in Namibia, assessment of the potential environmental impacts of providing water points in the Khorixas constituency should be a priority of any water management strategy. In South Africa for example, some of the organisations that assist rural communities in increasing access to water and sanitation services such as the Mvula Trust require that projects submitted for their support be accompanied by a statement on the likely environmental impacts of the project. Where the project is likely to have negative effects on the environment, an Environmental Impact Assessment is required. This requirement is intended to increase awareness of rural communities on activities which are likely to have adverse effects on their environment, and encourage appropriate actions to be taken to mitigate any adverse effects of the projects (Rall, pers. comm. 1997).

### **Social sustainability**

Social sustainability entails the need for a framework that empowers self control over the resources (Jacobson et al, 1995). Local communities must have the necessary skills and knowledge to meaningfully participate in the operation and maintenance of their systems. Social sustainability in natural resource management also seeks to achieve equitable distribution in the use of resources, and to avoid excessive consumption of resources (Hill and Bowen,

1997). In the context of water management in the Khorixas constituency, social sustainability would imply that local communities get the necessary education and training to be able to understand that water resources are limited and need to be shared by both present and future generations, thereby calling for more sustainable use. However, without necessary education and capacity enhancement of local communities on ecological sustainability of water points as has been highlighted earlier, social sustainability will be difficult to achieve.

### **Economic and technical sustainability**

Economic sustainability in policies for resource management seeks to ensure that the costs of resource management are affordable to the resource users and considers how these resources will be made available to other users in future (Jacobson et al., 1995).

Although the cost-recovery programme for operation and maintenance of boreholes under the Rural Water Supply Policy was to be implemented from 1 April 1997, affordability by the communities in the Khorixas constituency had not been fully addressed. Communities in the Khorixas constituency have indicated that borehole infrastructure will be expensive to maintain when the cost-recovery programme is implemented. If infrastructure is expensive to maintain, it will be economically unsustainable for the communities. If the policy is implemented without considering the affordability by communities, there is a likelihood that local communities will not be committed to taking over responsibility for maintenance of the boreholes. Moreover, if existing boreholes quickly run dry and new water points have to be drilled, local communities will incur more costs which will be beyond their financial capability.

Deutsche Gesellschaft für Technische Zusammenarbeit (1989) highlights that communities will only be willing to take effective responsibility for running their own water supply system, if they obtain a system that they have chosen, can afford and have the resources to sustain it. Technology choice must match the community resources available for upkeep of the system. When technology is inappropriate or too sophisticated, unaffordable or unmanageable, there will be problems of operation, maintenance and rehabilitation. (GTZ, 1989).

It can therefore be concluded that if technology for the boreholes in the Khorixas constituency is unaffordable and costs of providing water are beyond the financial resources of communities, communities will not be committed to taking over responsibility of the boreholes and will not be able to sustain maintenance of their water supply system. Without co-operation and commitment of local communities, the Water Point Committees cannot fulfil their mandate and this will hinder their effectiveness in the management of water resources.

This analysis of the Rural Water Supply Policy illustrates that implementation of the Policy in the Khorixas constituency falls short of adequate mechanisms for achieving sustainability. Lack of necessary education and understanding of the vulnerability of the resource base by local communities and mismanagement of the natural environment will increase the risks of ecological degradation. Unaffordable technology is likely to lead to lack of commitment from communities and therefore jeopardise long-term sustainability of the cost-recovery programme and the effectiveness of the Water Point Committees.

#### **6.4 SOCIAL ORGANISATION AND SOCIAL STABILITY OF THE COMMUNITIES**

The social organisation of communities in the Khorixas constituency offers great potential for the effectiveness of the Water Point Committees. Generally, families have common problems in terms of availability of scarce resources such as water and grazing land. The scarcity of these vital resources under unpredictable environmental conditions has compelled communities to be dependent on one another for their livelihood and survival.

Despite this inter-dependency, the situation in the constituency is complicated by a number of factors. The 'fluidity' of communities makes it difficult to identify definite users of a water point at any particular time. Definition of what comprises a community becomes difficult and this has a direct impact on water management. Moreover, the diverse composition of people in a settlement at any particular time presents a potential for conflict amongst the water users because they have different interests and needs. For example, absentee farmers who have other sources of income and do not depend on livestock production as their only source of income may not give as much priority to sustainable water management as farmers whose livelihood

depends entirely on livestock production. Reliance of some community members on other sources of income such as pensions, formal employment in urban areas and other external sources of income will probably contribute to lack of interest in intensifying water management in the constituency. A similar example in Lesotho was given in Section 2.3.1. Due to the reliance of villagers on external sources of income, an elected grazing association committee was unable to motivate villagers to participate in a range management programme over a badly degraded watershed. Although water is so critical to people's livelihoods in the Khorixas constituency, there could be varying levels of commitment amongst community members to participate in local-level management efforts, and this will hamper any water management strategies.

Without clearly identifiable community members and common interests amongst community members, decisions on water management will vary and conflict of interests will emerge reducing the potential for effective functioning of the Water Point Committees. The complexity in terms of characteristics of the water users in the Khorixas constituency therefore demands more involvement from central government, because the nature of problems such as lack of incentives and conflicting interests may be complex for the Water Point Committees to handle without any form of higher level institutional support. This issue of incentives is further discussed in Section 6.5 below.

## **6.5 WATER AS A RESOURCE AND INCENTIVES TO LOCAL COMMUNITIES**

An assessment of costs and benefits of water management by communities will determine the extent to which the Water Point Committees in the Khorixas constituency will be effective. Lawry (1990) highlights that where the resource is of little economic value to local people, local institutions are unlikely to be effective. In the Khorixas constituency, water is highly variable, very scarce and is critical to people's survival, and yet it does not contribute to overall household income, particularly in comparison to livestock farming which is the main source of income in the constituency. Where water management conflicts with its use for other purposes such as livestock, it could be difficult to encourage local communities to improve water management because water is not of high economic value to them. Moreover, large herd sizes are a sign of social status in the community in the constituency.

The effectiveness of the Water Point Committees in the Khorixas constituency will also be hampered by the fact that benefits that accrue from water management are not tangible and immediately visible to communities, as compared, for example, with benefits that would be derived from wildlife management. Furthermore, under the present tenure arrangements, it is difficult to exclude anybody from using the water. Therefore, there are no incentives for water management because the benefits of management accrue to all community members irrespective of whether they participate in water management efforts or not.

Under this complex setting, it will be necessary for government to play a more active role in the local management of water in order to control use of water and possibly develop some innovative incentives to encourage community participation in water management. Moreover, poor water management in the region can have far reaching environmental consequences, hence the need for government's involvement.

## **6.6 NEW INSTITUTIONAL STRUCTURES VIS-À-VIS TRADITIONAL STRUCTURES AND INDIGENOUS MANAGEMENT SYSTEMS**

In the Khorixas constituency, traditional chiefs and headmen still play a central role in land allocation and resolving land disputes. Traditional chiefs and headmen are still influential and their authority is recognised as 'legitimate' amongst communities (MPhil. Baseline Report, 1997; Muruwoa, pers. comm., 1997). The Rural Water Supply Policy however provides for the establishment of elected Water Point Committees excluding the potential role that these traditional chiefs and headmen could play in water management.

Notwithstanding the fact that the Traditional Chiefs Council plays an advisory role to the State President on land issues, the direct involvement of the traditional chiefs in the Water Point Committees could strengthen the effectiveness of these committees. Their practical knowledge and experience in resolving community disputes could be an added advantage to the Water Point Committees when addressing water management problems in the constituency. Because traditional chiefs are closer to individual community members at 'grass-roots' level, they can solicit community co-operation (Hangula, 1995). Moreover, communities have requested that any attempts to address resource degradation and sustainable use of water has to fully involve

traditional leaders in order to gain support and commitment from communities. If the Water Point Committees are to be seen as 'legitimate' and are to earn support of the communities they should be fully representative of traditional community decision making structures.

Lack of involvement of local diviners in the Khorixas constituency during the siting of water points contributes to lack of commitment in water management from communities. Although indigenous management systems do not necessarily prove successful at all times, it is important that these local diviners are involved in the planning of water points. Communities will not be committed to government developmental programmes if they feel local knowledge has been ignored and they have not been involved in decision making on matters relating to project design and implementation (Paul, 1988).

## **6.7 WATER POINT COMMITTEES AND GENUINE DEVOLUTION**

The effectiveness of the Water Point Committees in the Khorixas constituency will greatly depend on the extent to which they are legally empowered to enforce their decisions. Legal recognition of the Water Point Committees will determine what they can do, how they relate to other institutions and how they can protect their rights. Reluctance by relevant government authorities, specifically the Office of the Attorney General to give the Water Point Committees a legal status could frustrate any efforts by the committees to enforce their decisions and therefore effectively manage water resources. Korten (1986) and Murphree (1994) argue that when there are no legally recognised mechanisms to enforce decisions, even well functioning local institutions are likely to fail. A clear and independent legal mandate that commands the respect of the state and the communities would likely enhance the effectiveness of the Water Point Committees.

In Namibia, the 'conservancy' concept initiated by the Ministry of Environment and Tourism also offers some useful lessons that could be applied to the Water Point Committees. Conservancies are legally constituted bodies which have legal rights to use and manage wildlife within conservancy boundaries for the benefit of the community. Before a conservancy is registered, the Ministry of Environment and Tourism has to be satisfied that a conservancy has a geographical definition which is not disputed, a conservancy has a proper constitution which

includes a set of rules as to how it will operate, the management committee is representative of the community, the committee has the capacity to manage funds adequately and a policy to plan for equitable distribution and use of funds' (Jones, 1995). Legislation supporting people in communal areas to gain rights over wildlife through conservancies was passed by Parliament in June 1996 (Jones, 1996). This legislation thus enables communities to have legal control over wildlife and the accruing benefits.

Devolution should also include giving decision making powers to the Water Point Committees. If the Water Point Committees are expected to take responsibility for the water points, there must be willingness to relinquish power from higher level structures such as from the Local Water Committees. Such willingness will be demonstrated by enactment of legislation which will mandate devolution of decision making powers to the Water Point Committees. Policy supporting local-level resource management without appropriate legislation will have very little chances of success (Murphree, 1994). Although the Local Water Committees have not yet been elected in the Khorixas constituency, under the present organisational arrangements, the Local Water Committees for example, represent the Water Point Committees and take some decisions on their behalf.

It is still too early to make any conclusive statements about the working relationship between the Water Point Committees and other institutional structures involved in water management in the Khorixas constituency. However, it can be emphasised that the Water Point Committees are likely to be effective management institutions if they are granted legal decision making powers. These include the right to determine rules on the use of water points, powers to exclude 'outsiders' and to enforce sanctions against breach of the rules.

## **6.8 CAPACITY BUILDING**

Although the cost-recovery programme including a training plan to support community-based water management was to be implemented from 1 of April, 1997, there was no comprehensive training programme developed and executed to ensure capacity-building of the Water Point Committees and the local communities in the Khorixas constituency. The emphasis of the Water Point Committees training programmes in the Khorixas constituency was on operation

and maintenance of boreholes and financial management. While these initiatives are acknowledged, it was noted that these training programmes were not really effective in terms of building confident and self-sustaining committees.

Beneficiary capacity building for any development programme should empower beneficiaries by strengthening their skills and knowledge so that they can manage their environment (Paul, 1988). In the Khorixas constituency, in particular, beneficiary capacity building should entail a framework which creates empowerment of communities through strengthening their skills and knowledge so that use of their land and water resources is not to the detriment of their natural environment. Knowledge and understanding of the interface between the human activities and the environment in a non-equilibrium environment should be given priority in any community capacity building programme. Simultaneously, environmental education should form an integral part of training for the Rural Water Extension Officers since they are expected to train the Water Point Committees.

Simultaneously, the capacity of the Khorixas DRWS regional office needs to be strengthened, if it is expected to play a leading role in facilitating implementation of the Rural Water Supply Policy. Shortage of extension staff and financial resources will constrain implementation of the policy in the constituency. Moreover, the centralised financial resource allocation mechanism by government seemed to be a significant barrier in achieving desired outcomes. It is probably unlikely that strong Water Point Committees will emerge in the constituency if they are not supported by a strong government extension service. If the Khorixas DRWS regional office is expected to implement the Rural Water Supply Policy effectively, central government must be committed to give the regional office enough power to make decisions. The Khorixas DRWS regional office should have its own budget and authority to allocate resources. The office should decide on the number of staff employed and have power over expenditure. Central government must not only pay lip service to decentralisation of its services and giving responsibility to local communities while it retains authority over key decision making powers.

## 6.9 CONCLUSION

The Rural Water Supply Policy in Namibia lays the foundation for local-level management of water supply in rural areas in Namibia. In the Khorixas constituency, the Water Point Committees are being established to take responsibility for the water points. However, some of the provisions of the National Land Policy hamper efforts towards local-level management of water. The absence of tenure security for communal farmers in the Khorixas constituency will be a major constraint towards sustainable management of water by the Water Point Committees and the local communities.

Lack of involvement of traditional leaders in the Water Point Committees and use of indigenous knowledge systems in siting of boreholes by local diviners will likely impact negatively on the effectiveness of the Water Point Committees. Local communities are unlikely to be committed to water management efforts where they believe they have not taken part in the decision making process and local-level management structures are not fully representative of their traditional decision-making structures.

Without genuine devolution, the Water Point Committees cannot become effective management institutions. The committees must have the right to determine rules of access to and use of the resource, and have legal powers to enforce their decisions. Government must therefore provide for enabling legislation that will facilitate devolution of decision making powers to the Water Point Committees.

Water Point Committees and local communities should have an understanding of how their actions may contribute to the degradation of their sensitive environment. Community training programmes should aim at increasing awareness of local communities on the environmental implications of borehole provision in the constituency. It is anticipated that this could enhance commitment to sustainable management of water resources.

The Khorixas DRWS regional office, which is charged with the responsibility for implementing the Rural Water Supply Policy must be supported with requisite resources to fulfil its mandate. The failure by the Khorixas DRWS regional office to deliver its services efficiently and effectively in the constituency will have negative consequences on the effectiveness of the

Water Point Committees and generally on the successful implementation of the Rural Water Supply Policy in the Khorixas constituency.

Ultimately the success of the Water Point Committees in the Khorixas constituency will depend on the extent to which there are mechanisms in place to ensure that implementation of the Rural Water Supply Policy takes cognisance of the principles of sustainability.

**Table 6.1: Framework for assessment of the criteria for the effective functioning Water Point Committees in the Khorixas constituency**

<b>Criteria</b>	<b>Conditions</b>	<b>Comments</b>
<b>Security of tenure</b>	-Clearly defined boundaries of the resource and of the resource users	Not satisfactorily addressed
<b>Achieving sustainability</b>	-Ecological sustainability -Social sustainability -Economic and technical sustainability	Not satisfactorily addressed
<b>Social organisation and social stability</b>	-Homogeneity of resource users -Resource users are well defined	Not satisfactorily addressed
<b>Water as a resource and incentives to communities</b>	-Assessment of costs and benefits -Variability of the resource	Not satisfactorily addressed
<b>New institutional structures vis-a-vis traditional structures and indigenous management systems</b>	-Using existing traditional institutions -Utilising indigenous management systems -Different institutions to be co-ordinated	Not satisfactorily addressed
<b>Water Point Committees and genuine devolution</b>	-Government legislation -Clearly specified rules and guidelines	Not satisfactorily addressed
<b>Capacity building</b>	-Strengthening skills and knowledge of resource users -Adequate resources to perform required functions	Not satisfactorily addressed

## CHAPTER SEVEN

## **7. CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 INTRODUCTION**

This dissertation has illustrated that local-level institutions are an appropriate institution for sustainable management of common property resources, provided they are supported by effective policies, have capacity and resources and there are adequate mechanisms and appropriate institutional arrangements that support local-level management. Water Point Committees which are being established in the Khorixas constituency therefore, can become a vehicle for promoting sustainable water management in the constituency given an enabling environment. However, the lack of: security of tenure of the natural resources; decision making powers by the Water Point Committees; capacity; involvement of traditional leaders and use of indigenous management systems and consideration of sustainability attributes in the implementation of policies at the local level could hamper the effectiveness of the Water Point Committees and efforts for sustainable management of water supply in the Khorixas constituency.

This chapter draws some conclusions from the analysis in Chapter 6 and makes broad recommendations that could improve the effectiveness of the Water Point Committees in the Khorixas constituency. The recommendations include: re-introducing a common property regime; developing co-management arrangements between the Water Point Committees and other institutions; working with and strengthening traditional institutions and management systems; building institutional capacity; using appropriate technology; defining the communities and undertaking environmental assessments for all water provision programmes in the Khorixas constituency. These recommendations and their advantages are summarised in Table 7.1 at the end of this chapter.

### **7.2 RE-INTRODUCING A COMMON PROPERTY REGIME**

Common property management regimes are a viable system for managing water resources in the Khorixas constituency and therefore should be re-introduced.

The communal system of resource management in the Khorixas constituency has broken down as a result of fundamental changes in state policies which have undermined the ability of local-level institutions to assert control over all resource users or regulate the actions of the water users. However, the state is failing to provide effective control, and resources such as water and land which were once common property are increasingly becoming accessible to all, with resultant resource degradation. While reverting to a common property regime might be difficult under the current changing socio-economic conditions in the constituency such as increasing population, it appears from this study that communal water management in the Khorixas constituency has advantages over other resource regimes.

Communal management of water would possibly allow equitable use of the resources and provide a 'safety net' for the poor sections of the community who would otherwise be marginalised under any other form of resource management. Through communal management, community groups can enter into agreements with one another to negotiate access to resources such as grazing and water in a situation where one group has a surplus and the other a resource deficit. The scarcity of water resources in the Khorixas constituency demands that they be used communally, and therefore communal management becomes the most appropriate management option.

Implementation of a common property regime would restore control over resources which are currently open access due to ineffective state control. The National Land Policy should therefore provide the option of communal tenure in communal areas in order to improve security of tenure of land and water resources.

### **7.3 DEVELOPING CO-MANAGEMENT ARRANGEMENTS BETWEEN THE WATER POINT COMMITTEES AND OTHER INSTITUTIONS**

The complex and changing socio-economic conditions in the Khorixas constituency demand innovative management arrangements between the Water Point Committees, the state and other institutions.

Strengths and weaknesses of local-level water management should be recognised and new forms of partnerships established between the Water Point Committees and the state.

However, such partnership arrangements should provide an enabling, facilitative and back up role for the state rather than one which replaces or undermines local institutional capacity. For instance, government could help create conditions conducive to effective functioning of the Water Point Committees by assisting with enforcement of rules which have broad support in the community, especially where the Water Point Committees do not have authority to control 'free riding' and where conflict exists amongst water users. It may also be appropriate for government to work with traditional leaders, particularly for rule enforcement and conflict management, drawing from the practical experience of traditional leaders. Government should also assist with developing incentives that will enhance water management since the success of local-level management is likely to be higher when local communities can see tangible and immediate benefits.

Water Point Committees in this partnership also need enabling legislation and good extension service from government. Water Point Committees must have legal powers to decide how the water is to be used and their decisions must be legally binding to the resource users. Without a clear legal mandate, even well functioning Water Point Committees are likely to fail in implementing their decisions. Legislation mandating devolution of decision making powers to the Water Point Committees must therefore be enacted so as to empower committees to have legally recognised decision making powers.

#### **7.4 WORKING WITH AND STRENGTHENING TRADITIONAL INSTITUTIONS AND MANAGEMENT SYSTEMS**

Traditional chiefs and leaders in the Khorixas constituency are recognised as 'legitimate' and representative of community decision making structures and therefore should take a leading role in community development initiatives such as local-level water management.

Government efforts to develop local institutional capabilities should take cognisance of traditional institutions and should work co-operatively with them. The first preference would be to work with traditional institutions unless they are wholly discredited in the eyes of the local people. It is important that these traditional institutions be carefully involved from the outset of any development initiative since their exclusion could jeopardise the

legitimacy and final implementation of a development programme such as the cost-recovery programme of rural water supply. In this regard, it may be desirable for traditional chiefs to become ex-officio members of the Water Point Committees so that they are fully involved and can solicit commitment for participation from their communities. Indigenous knowledge systems, such as use of local diviners in siting of water points should be utilised and combined with scientific technical expertise where possible in order to build trust and commitment for taking responsibility for water management amongst communities.

## **7.5 BUILDING INSTITUTIONAL CAPACITY**

Lack of institutional capacity will retard the effectiveness of Water Point Committees in the Khorixas constituency. An effective institutional capacity building programme in the constituency is necessary to change attitudes of members of the community and to precipitate appropriate action at all levels.

The key objective of training the Water Point Committees should be to develop more self-confident and self-sustaining local institutions. In particular, capacity building for the Water Point Committees in the Khorixas constituency should involve increasing awareness and understanding of the environmental implications of human activities such as the provision of boreholes as well as over-utilisation of water resources in the region. Simultaneously, the Rural Water Extension Officers should have an increased knowledge base of the regions natural environment and the implications of human malpractices. An effective approach to capacity building and institutional development could seek to disseminate information widely. This could mean that the Water Point Committees are given intensive training, and they in turn build capacity of the broader community through training workshops. Such training would have long-lasting effects and will empower members of the community to meaningfully participate in water management efforts.

The Khorixas DRWS regional office must have the capacity in terms of human, financial and material resources in order to function efficiently and effectively. Central government must be committed to relinquish power to the regional office to make decisions on the budget, staff appointments and expenditures.

Capacity building could also be enhanced by fostering horizontal linkages between the different Water Point Committees within and outside Namibia so as provide for exchange of experiences. Such exchange programmes could provide relevant information for decision makers who have the responsibility to make the Water Point Committees effective.

## **7.6 USING APPROPRIATE TECHNOLOGY**

Communities in the Khorixas constituency have indicated that they cannot afford the costs of maintaining the borehole structures and therefore the long-term sustainability of the cost-recovery programme will be adversely affected. The effectiveness of the Water Point Committees in facilitating community participation and sustainable management of water supply in the Khorixas constituency will in turn be hampered by the inability of the communities to maintain their borehole infrastructure.

The type of borehole infrastructure utilised must match community affordability levels. There is need for further research on the most appropriate borehole technology to be used before communities in the Khorixas constituency can take over the responsibility of maintenance of boreholes. Appropriate technology in this regard should take cognisance of the affordability of maintenance costs which must be borne by local communities. Given the economic characteristics of communities in the Khorixas constituency, Government may have to consider subsidising the communities even when the cost-recovery programme is implemented.

## **7.7 DEFINING THE COMMUNITIES**

Communities in the Khorixas constituency are not homogeneous and stable in one place. Defining who are members of the community is therefore critical for the success of water management strategies and therefore to the effectiveness of the Water Point Committees.

It would be important to identify the 'legitimate' members of a water point managing community. Definition of who uses the water points is critical for enforcement of rules and for any benefits that may accrue from water management. Local communities with the

assistance of government should formulate regulations on who is entitled to use the water points as well as methods of access. A compromise might be to follow the approach used in Zimbabwe whereby a citizen is free to live anywhere, but is not free to use local community resources until he/she has met locally determined requirements such as acceptable length of residence, demonstrated environmentally responsible behaviour and participated in local institutions. This implies a clear distinction between residence rights and resource use rights (Fuller and Turner, 1996). Another strategy could be to introduce the 'user pays' principle whereby 'outsiders' pay for use of water, and the cost would be dependent on the size of the family and the number of livestock.

## **7.8 ENVIRONMENTAL ASSESSMENT FOR RURAL WATER PROVISION PROGRAMMES**

The long-term sustainability and success in the implementation of the Rural Water Supply Policy will largely depend on the extent to which the sustainability criteria have been considered in the implementation of rural water supply programmes.

Future borehole provision programmes in the constituency should evaluate the likely environmental consequences that are likely to occur as a result of the programmes. Thus, Strategic Environment Assessment (SEA) should be used as a decision-aiding tool in future borehole provision programmes. By introducing SEA at a programme level, significant environmental impacts of water provision programmes could be identified before the projects are implemented, and cumulative and large-scale effects could be predicted at an early stage, serving as an 'early warning system' to all relevant parties. Where provision of water points is likely to have adverse effects on the environment, an Environmental Impact Assessment (EIA) should be undertaken. Environmental impacts should be considered holistically, thus including ecological, social and cultural, economic and technological impacts.

This dissertation has demonstrated that that local-level institutions, under the 'right' conditions and given an enabling environment, could be some of the appropriate and effective institutions for management of certain resources. The dissertation has further highlighted that the 'common property regimes' under certain conditions can act as

powerful catalysts for development of local-level institutions and community participation in resource management. The success of the 'common property regimes' and local-level institutions in resource management is however dependent on the appropriateness of the socio-cultural conditions and availability of economic and legislative measures that will be conducive for local-level management. These conditions and measures include: social stability of communities; recognition and strengthening of existing institutional structures and utilisation of indigenous management systems where possible; strengthening the capacity of the relevant management structures and the resource users; devolution of decision making powers to resource users; clearly defined rules and regulations on the use of the resource and assessment of benefits to be derived from resource management. The effectiveness of local-level institutions will also depend on the extent to which the attributes of sustainability will be taken into consideration in the implementation of policies. Policy changes that introduce new local-level management institutions without taking cognisance of these conditions and measures may likely fail to achieve desired results.

While this dissertation has focused on the Water Point Committees in the Khorixas regional constituency, the findings of this study suggest that they can have broader application in other areas in Namibia. Thus, while transferring responsibility to local-level institutions is necessary, and is the key to enhancing the sustainability of water supply in the Khorixas constituency, creating effective Water Point Committees country-wide will be a major challenge for the Government of Namibia. A variety of measures need to be put in place in the short and long-term taking cognisance of prevailing local conditions to ensure that policies supporting local-level water management are translated into practical and sustainable actions.

**Table 7.1: Summary of the recommendations that could improve the effectiveness of the Water Point Committees in the Khorixas constituency**

Recommendations	Advantages
<p><b>Re-introducing a common property regime</b></p>	<ul style="list-style-type: none"> <li>-Can be co-ordinated with other regimes.</li> <li>-Provides equitable use of resources.</li> <li>-Provides a 'safety net for poor sections of the community.</li> <li>-Communities can enter into exchange agreements.</li> <li>-Water has to be used communally, and therefore a common property regime is the most appropriate management option.</li> <li>-Would restore control where there is open access.</li> </ul>
<p><b>Developing co-management arrangements</b></p>	<ul style="list-style-type: none"> <li>-Utilises strengths of different institutions to address complex issues.</li> <li>-Strengthens capacity of Water Point Committees.</li> <li>-Traditional institutions have an opportunity to be directly involved.</li> <li>-Government can assist by developing incentives and enabling legislation.</li> <li>-Greater chances of rule enforcement and control of 'free riding.'</li> </ul>
<p><b>Working with and strengthening traditional institutions and management systems</b></p>	<ul style="list-style-type: none"> <li>-Their experience can be utilised.</li> <li>-They are regarded as 'legitimate' by local communities and therefore earn community respect and trust.</li> <li>-Understand local conditions and problems.</li> <li>-Are closer to local communities and can solicit community commitment to development initiatives.</li> </ul>

Cont. Table 7.1

<b>Building institutional capacity</b>	<ul style="list-style-type: none"> <li>-Would increase awareness and understanding of the natural environment amongst communities.</li> <li>-Members of the community would have necessary skills and knowledge in management of their environment.</li> <li>-Would enhance efficiency and effectiveness of relevant institutional structures involved in water management.</li> <li>-Confident and self-sustaining local institutions likely to develop.</li> </ul>
<b>Using appropriate technology</b>	<ul style="list-style-type: none"> <li>-Would ensure long-term sustainability of the cost-recovery programme.</li> <li>-Communities likely to be willing to take over the responsibility for maintenance of boreholes.</li> </ul>
<b>Defining the communities</b>	<ul style="list-style-type: none"> <li>-Would facilitate rule enforcement.</li> <li>-Benefits of environmental management would accrue to the appropriate people.</li> <li>-Payment for water would be in accordance to the level of consumption.</li> </ul>
<b>Environmental Assessment for rural water provision programmes</b>	<ul style="list-style-type: none"> <li>-Would increase environmental awareness on implications of human malpractices on the environment.</li> <li>-Negative environmental impacts would be determined at an early stage and appropriate actions taken.</li> <li>-Would ensure long-term sustainability and success in the implementation of the Rural Water Supply Policy.</li> </ul>

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#### **PERSONAL COMMUNICATIONS:**

1. Carstens C. (7/02/1997) Senior Foreman, Khorixas DRWS office.
2. Koch H. (29/01/1997) Director - Directorate of Rural Water Supply, Windhoek.
3. Muruwoa D. (10/02/1997) Desert Research Foundation of Namibia, Traditional chief and Chairman of Farmers Union, Khorixas.
4. Rall M. (27/05/1997) Projects Manager, Mvula Trust, Telephone discussion.
5. Samupofu S. (02/03/1997) Head - Khorixas regional DRWS office, Khorixas.
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7. Tjipueja H. (29/01/1997) Director of Lands, Resettlement and Rehabilitation, Windhoek.

# PLATES



**Plate 2:** A borehole sited by government geohydrologists has been abandoned because it does not yield sufficient water to meet community needs



**Plate 3:** Increasing pressure on land may exacerbate the sensitivity of the natural ecosystem and may lead to irreversible environmental degradation

# APPENDICES

## APPENDIX 1

### GUIDELINES FOR THE TASKS AND RESPONSIBILITIES OF THE LOCAL WATER COMMITTEES (DEPARTMENT OF WATER AFFAIRS, 1994)

The Local Water Committee is a body representing the community of a particular area. The Local Water Committee will be expected to:

- assist the government or its representative with the planning and implementation of the scheme
- carry out negotiations to obtain all rights of way needed for the proposed scheme and to see that these rights are respected
- organise the necessary labour and or materials for the construction of the scheme
- assume operations and management tasks of the scheme after official handing over
- appoint and supervise one or more scheme caretakers who will supervise the scheme operation, maintenance and repairs
- arrange for and supervise all major repairs that are too difficult for the water point caretakers
- ensure that all members of the community have access to the available water
- collect money from Water Point Committees and to pay for the operation and maintenance costs and keep records of all income and expenditures
- enter into an agreement with the Department of Water Affairs about the costs and supply of services
- set water tariffs for the end user so that operation and maintenance costs of the scheme are covered; tariff structure will be made according to national policies
- provide the scheme caretakers with the funds for operation and maintenance
- hold regular meetings and keep records of the meetings
- guide and monitor the activities of Water Point Committees
- invite a representative of the Water Point Committees
- monitor and prepare standard reports about the activities of the scheme caretakers, the local water committee and the use of the water scheme
- submit monitoring reports to the Central Water Committee and the Rural Water Extension Officer and,
- attend the Central Water Committee meetings.

## APPENDIX 2

### GUIDELINES FOR THE TASKS AND RESPONSIBILITIES OF THE WATER POINT COMMITTEES (DEPARTMENT OF WATER AFFAIRS, 1994)

The Water Point Committee is a body representing the community. It is elected by the community which uses the water point. The aim of the committee is to:

- assist the Local Water Committee during the planning, design and construction of the project with the manpower, materials, choosing the location of water points and many other jobs that have to be done
- keep the water point in good shape and clean
- create awareness that the community members are responsible for the water point
- provide rules for operation of the water point if needed, and to make sure that the rules are obeyed
- address complaints or misuse of water points and solve these problems in a peaceful way
- ensure that all members of the community have access to the available water
- collect money to pay for operation and maintenance costs
- keep records of all income and expenditures
- appoint and supervise a caretaker who will be a special member of the Water Point Committee and who will carry out the operation and maintenance of the water point
- support the caretaker in his or her work
- hold regular meetings
- report repairs which are too difficult for the community to carry out to the Local Water Committee and the Rural Water Extension Officer
- report to the community on the monthly meetings of Water Point Committees
- collect the log books of the caretaker
- prepare Water Point Committees Meeting report, including the Treasure's Account Book and submit it to the Local Water Point Committee and the Rural Water Extension Officer and,
- send a delegate to Local Water Committee meetings.

### APPENDIX 3

#### DEFINITION OF RATINGS

Rating	Definition
High significance	If the condition is not met, there will be fewer or no chances of success or effectiveness in resource management
Medium significance	Success in resource management can be achieved even if the condition is not met. Usually, success or effectiveness also depends on other factors being met
Low significance	It is an insignificant condition in determining the success or effectiveness in resource management