

https://dspace.org/

COMMUNITY PARTICIPATION CONCERNS FOR

SEHLAPELO, DESIRÉE LORRAINE MOSIMA

2011-06-10
http://hdl.handle.net/10539/10091

Downloaded from a DSpace repository. https://dspace.org/

COMMUNITY PARTICIPATION CONCERNS FOR SUSTAINABLE DEVELOPMENT IN THE LAKE FUNDUDZI REHABILITATION PROJECT

DESIRÉE LORRAINE MOSIMA SEHLAPELO

Research report submitted in partial fulfilment of the requirements for the degree of Masters in Management (Public and Development Management) at the University of the Witwatersrand, Johannesburg, South Africa

June 2006

DECLARATION

I declare that this report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Management (in the field of Public and Development Management) in the University of Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.

SIGNATURE:…….. **DATE:** 18 October 2006

ACKNOWLEDGEMENTS

I would like to extend my sincere gratitude to the different people and organisations that made the completion of this research report possible. Firstly, I would like to thank Dr. Johnny Matshabaphala, my Supervisor, whose contribution in the structuring and completion of the study is invaluable. He also guided me throughout the entire work. I would like to thank posthumously Professor Guy Mhone who instilled in me an interest in Economics and Development in general.

I am indebted to Livhu Motabatsindi for editing the research report and to the surrounding communities of Lake Fundudzi, namely, Tshiavha, Thononda and Tshiheni tribal villages. I am grateful to my field assistants Lucas Maremba, Dakalo Nemakonde, Ramuhunu Nbietsheni and Ronald from Working for Wetland Limpopo. I thank the Department of Water Affairs and Forestry, the Working for Wetland Programme, and the National Department of Agriculture for granting me permission to carry out the study in the area under their jurisdiction.

I sincerely thank my family Di-Kgomo le Bakwena, my parents Mr F.A.M Sehlapelo and the dearly departed N.E. Sehlapelo (*née* Tibane) who natured my life. Martin and Mogau, my brothers, who helped in more ways than one. My many friends for their truth, caring, criticism, and above all being there to see me through.

Lastly, I would like to thank Brice Bassoumba-Ibouanga, my partner, for supporting my endeavour to complete this work, offering me an emotional base, understanding and accepting my challenges as a person, as well as motivating me to be a better person in all respects.

ABSTRACT

This study investigates the role of the community in participating in the development and rehabilitation of Lake Fundudzi. The premise of the study is that community is the cornerstone of the success of any development. Conserving the environment is not the only way of ensuring its heritage or managing its resources.

The study specifically looks at the way the community interacts with its immediate environment, namely, the lake. It examines the types of benefits available to them. Chapter One introduces the problem statement, delimitations of the study, and significance of the study. Chapter Two reviews the extant literature, proffers an overview on what a wetland is, its function; it also provides different perspectives on Sustainable Development, including international and the local perspectives applicable to South Africa and the local area. Chapter Three proffers Research Design and Methodology i.e. Observations of stakeholders, and questionnaire as a research tool. Chapter Four presents research findings of the research done in the three villages. Chapter Five analyses and interprets the research findings. Finally, Chapter Six recommends and concludes the study.

EPILOGUE

Throughout the study we acknowledge that Lake Fundudzi is a sacred lake. It is a unique inland lake of great mythical and cultural importance to the Vhavenda people. The lake is sacred because the ancestral spirits of the Vhatavhatsindi tribe inhabit it. We thus respect cultural beliefs or values.

TABLE OF CONTENTS

3.2.1 Stakeholder Analysis.....20
3.2.2 Questionnaire.....21
4.2.1 General Profile of Thulamela Municipality.....25
4.2.2 Institutional challenges (Working for Wetland Program).....28
6.2.1 Stakeholders in Lake Fundudzi.....52
6.2.2 The Project Cycle Model.....53

CHAPTER 1
LAKE FUNDUDZI AND ITS CONSERVATION

1.1 INTRODUCTION

Post-apartheid South Africa has witnessed the remarkable development in the area of tourism of natural resources-- such as Lake Fundudzi. This can also be said to be the case even in the former Bantustans or homelands of South Africa. However, most of the previously disadvantaged communities have not yet begun to benefit from such development.

It is against this background that the conservation of the Lake Fundudzi will promote its scenic and idyllic qualities. These great qualities of the lake are more apparent in the lake's unique formation, the cultural beliefs, and the historic values that the local people attach to the lake as well as its economic potential for the local communities.

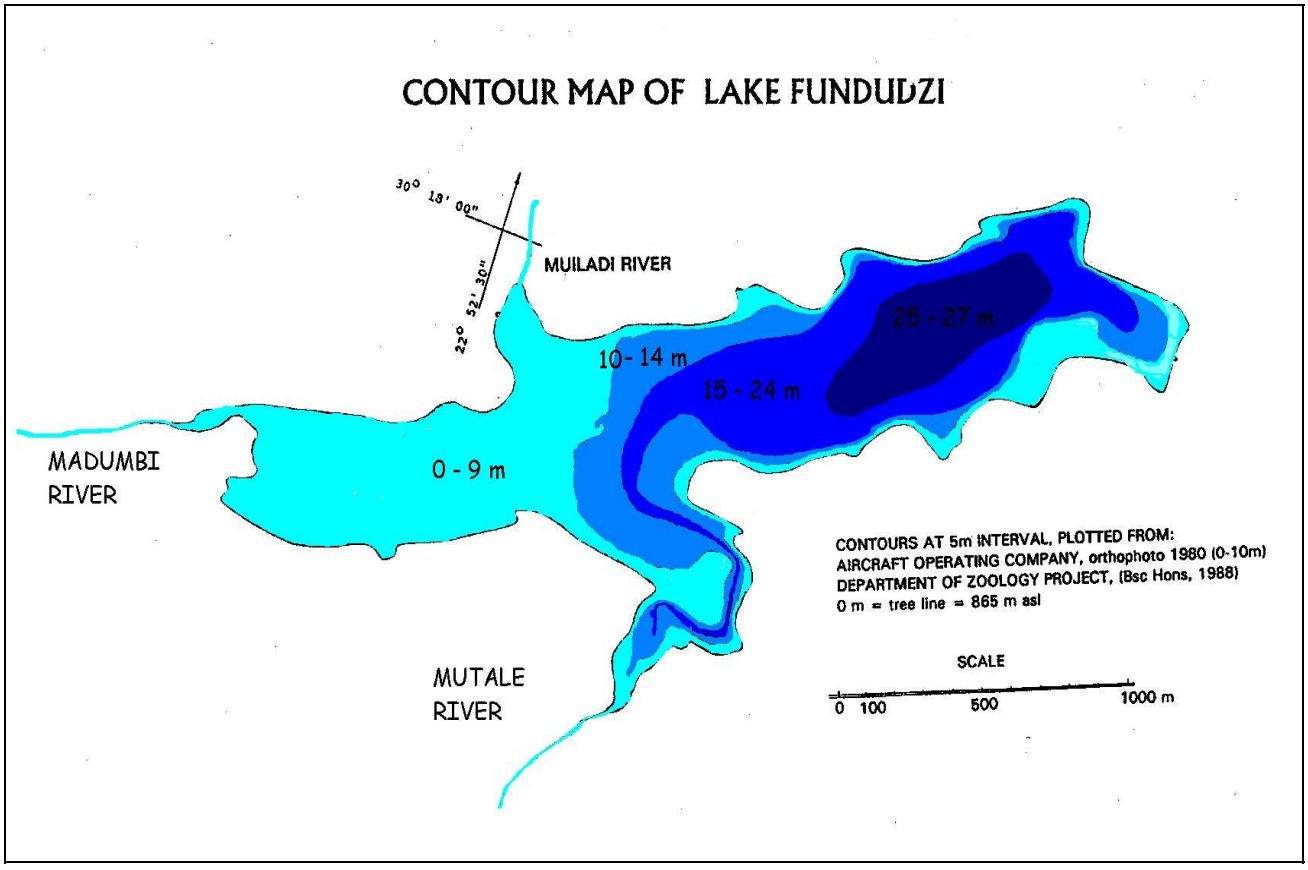


Fig. 1: Contour map of Lake Fundudzi

1.2 CONTEXT AND BACKGROUND

Lake Fundudzi is one of the few natural fresh water lakes in the southern hemisphere. Lake Fundudzi is found in the northern part of the Limpopo Province. It is the only natural inland fresh water lake in South Africa. It is believed to have been formed by a mountain landslide, which blocked the passage of water creating a lake in the upper part of the river.

Lake Fundudzi is situated in the upper catchment of the Mutale River, a major tributary of the Luvuvhu River. It is a type of lake that is standing water body that has no direct connection to the sea (Schwoerbel, 1987). Lake Fundudzi is the only true natural inland lake in the interior of South Africa and listed as such by (Noble and Hemens, 1978).

The Venda tribe considers the Lake sacred, especially the Vhatavhatsindi clan who are the custodians of the lake. The Vhatavhatsindi Royal Family of the Vhavenda people practices its religious rituals and burial customs by the lake. The Vhavenda people occupy the far northern part of the Limpopo Province, and their traditional territory is the Venda Region. In the north, the Vhembe River (Limpopo) separates this territory from Zimbabwe. It borders on the Kruger National Park and the Mopani District in the east and southeast. To the south and west, it borders on farms of the Capricorn District.

The Venda region is scenically beautiful. It enjoys a typical subtropical climate. Summers are hot and long, and winters are generally mild. Mean annual rainfall varies from between 300 mm and 800 mm in the low-lying northeast to between 800 mm and 2000 mm in the mountainous forest part of the south. This territory has many perennial rivers, most of which start from springs in the Zoutpansberg Mountain range. Because the soil is fertile, cattle ranching and the production of subtropical, fruit are sources of good income. The main economic activity of the people of this region is agriculture.

Venda's physical infrastructure was dramatically expanded and improved after it gained its nominal independence from the South African government in Pretoria in 1979. Such expansion of the infrastructure includes gravel and tarred roads, which provide access to economic growth sites, an electricity supply to urban and developed settlements, and a telephone network that links all points of growth. Thohoyandou is the capital town of the region and, as such, is the most developed urban centre.

There are other features such as the caves, waterfalls and the sacred forest that could enhance the lake area's eco-tourism potential as well. The Venda people consider Lake Fundudzi as a very important heritage site. Therefore, it must be conserved by protecting it from degradation, exploitation and any action that will reduce its natural value and longevity.

Lake Fundudzi[1] is the only natural lake in South Africa. It has multiplicity of stakeholders. Any conflict among the multi-stakeholders might hold back its development. Rural communities rarely have the resources and skills to manage natural resources autonomously. Rural communities may at one time have had effective systems for sustainable use. Nevertheless, the social, economic, and technological foundations of those systems are often eroded or completely gone. Nowadays communities tend to be less concerned with conservation of natural resources. They are ill equipped to conserve their natural resource. The modern variants of traditional practices often do not meet the needs of growing populations and increasing aspirations (Redford and Stearman, 1993).

Wetlands protect us from floods, droughts. They sometimes offer recreation. They also have strong cultural and religious values.[2]

1 The impact of a forestation on the available resource is based on an afforested area of 167 km 2. Most of this (134 km 2) is in the Luvuvhu catchment, which has a significant impact on the available yield due to its location upstream of the Albasini and Vondo Dams. The forestation in the Mutable catchment is all situated in the high lying area around Lake Fundudzi. Thohoyandou accounts for most of the urban water requirements in the catchment. The bulk of the rural requirements emanate from the Malamulele and Paswane areas, which are partially supplied from the Vondo Regional Water Supply scheme. With the completion of the Nandoni Dam, the rural areas of Malamulele, Paswane and Lambani will also be supplied from this dam.

2 *"Wetlands* are the collective term used for marshes, swamps, bogs, and similar areas. Wetlands filter sediments and nutrients from surface water and support all life forms through extensive food webs and biodiversity. Wetlands sustain all life and perform useful functions in the maintenance of ecological balance. Interfacing between land and water systems, they are highly productive and biologically rich ecosystems and are also the most endangered" (Ramachandra, 2001). "Wetlands suffer from over-extraction of fresh water, overuse of the resources, pollution and drainage," (The ongoing destruction of precious habitat, IUCN). "The key to sustainability in the continuation phase is the support system, which should be in existence thought the institutional arrangement of local government district council, provincial government and the national government. It is clear therefore that if "projects" are to survive and real services are to be delivered, equal if not more attention, investment and expertise needs to be targeted at ensuring that the institutional supports systems are

1.3 THE PROBLEM STATEMENT

The Proposed Rehabilitation and Development of Lake Fundudzi poses a threat to the imperatives of community participation and sustainable development in the area. This is in a large measure attributable to the proposed strategy in this initiative, for instance, community participation.

According to the Working for Water Management Team, Lake Fundudzi is facing an increased supply of sediment and other pollutants from its catchment area. This is due to the increased human settlement and agricultural activity in the catchment area.

1.4 THE PURPOSE THE RESEARCH

The purpose of this research was to find out how the planned rehabilitation of Lake Fundudzi would contribute to the Sustainable Development of the surrounding communities of the lake. The intention was to draw the attention of the strong *synergies* that exist between conservation of Natural Resources, Rural Development, and Participation of communities.[3]

1.5 GLOSSARY OF TERMS

Alien species: A species that is introduced and occurs in locations beyond its known historical range. This includes introduction from other continents, bioregions, and those species that are not native to the local geographical region. Synonyms for alien species include exotic, non-native, non-indigenous, and introduced species.

Weed: Any plant that poses a major threat to agricultural and or natural ecosystems. Lexical definition: a plant growing in an undesired location.

established and have the capacity to perform functions. The clockwork myths may apply to each institutional layer – it is not reasonable to assume that a District Council, for example, can be set up and will continue to function over years without support", (Abrams, 1999:5).Environmental impacts on wetlands may be grouped into five main categories: loss of wetland area, changes to water regime, changes in water quality, overexploitation of wetlands products, and introduction of exotic or alien plants (Ramachandra, 2001, page?).

3 "A large portion of the catchment's area has been converted from its initial mountain grassland into commercial forests. The Vhamusanda of the area have planted small forests of blue gum trees *(Eucalyptus)* to supply building materials to their villages" (Khorommbi, 2001, page?).

Native species: A species that occurs locally in the country. It is not a result of an introduction, historically or geographically.

Invasive species: A species that demonstrates rapid growth and it spreads, invades habitats, and displaces other species. Species that are prolific seed producers, have high seed germination rates, easily propagate asexually by root, or stem fragments. It mature rapidly predisposes a plant to being invasive.

Change ecosystem processes: Native ecosystems have developed under particular abiotic factors and ecosystem processes (e.g. rainfall patterns, fire regimes, rates of nutrients cycling), and have adapted to them. The presence of some alien species alters these processes, which in turn alters the ecosystems to the extent it can no longer support the native flora and fauna.

Wetland: a generic term for all the different kinds of wet habitats where the land is wet for some period each year but not necessarily permanently wet. Many wetlands occur in areas where surface water collects or where sheer underground water is discharged to the surface, making the area wet for extended periods. Other wetlands occur along our coast, such as salt marshes. The tide creates these other wetlands.

Development: a process of social, economic, and human empowerment through which ordinary people gain a greater control over the factors that control their lives. It is a process where people are at the centre of their own emancipation and development with the support of others.

CHAPTER 2
LITERATURE REVIEW

The first democratically elected government of South Africa 1994 inherited a serious and worsening unemployment problem, which GEAR – adopted two years later and it has had presumably been in the works since some time earlier. Partly because of this, in 1998, the government of South Africa introduced the 'Special Allocation for Poverty Relief, Infrastructure Investment and Job Summit Projects', or simply the 'Poverty Alleviation Fund'. The Poverty Alleviation Fund initially took over the remaining RDP funds, but in 1998/99 was capitalised by the central government with an additional R598 million, or 0.35% of the total non-interest government budget for that year (Baumann, 2001).

In early 1996, after a lot of public debate as to what the RDP meant for economic policy, the RDP Office was closed and the NGDS disappeared. The closure of the RDP office appeared to have been a consequence of the introduction of the framework for Growth, Employment, and Redistribution (GEAR) (Bond, 2000).

GEAR is a conventional neo-liberal macroeconomic recipe for economic growth. It may be incompatible with the goals of either the RDP or the NGDS. GEAR became the central economic and developmental programme of the government. The usual neo-liberal is that poverty eradication follows economic growth.

One would agree with the fact that an expanding economy that offered more employment would have the effect of diminishing poverty. The GEAR strategy has proved to offer very little in terms of poverty reduction. The word "redistribution" from the GEAR strategy's title appears to relate more to this potential equilibrating aspect of growth than any direct programme of, say, redistribution of assets. The document mentions poverty in only three contexts: 1) the importance of continuing on with the system of social grants for addressing poverty; 2) the importance of improving access to potable water; and 3) and whether there would be a need in having the minimum wage (Bond, 2000).

The environment does not feature in any integral way in the original GEAR framework. One of the few direct mentions of environment is the following:

Projects which meet certain basic conditions will be awarded a tax holiday, the duration of which will depend on three criteria. The basic qualifying conditions, which will include a sufficient level of domestic value added in a manufacturing process and evidence of a commitment to key economic goals including human resource development, foreign exchange conservation, and environmental responsibility, are not intended to be unduly restrictive.

The fact that "environmental responsibility" is something the government should take into account when evaluating applications for tax holidays, but not in too limiting a manner, reflects an underlying assumption of the contradiction between environmental integrity and economic progress.

While it is certainly not fair to judge an entire macroeconomic strategy by its founding document, it does appear that the adoption of GEAR represents a step backwards for poverty eradication and for sustainable development. These four observations were made:

- GEAR does not appear to embrace a sustainable development ethic, even implicitly.
- GEAR appears to lack sophistication in the complex area of poverty eradication. GEAR effectively replaced the RDP, which did embrace an ethic of poverty eradication through sustainable development and
- The adoption of GEAR spelt the demise of the institutionalised inter-departmental policy development forum that the NGDS promised to provide, and which if maintained was conducive to the pursuit of sustainable development. (Bond, 2000).

The fact that GEAR simply has not worked out as planned, in the sense that its macroeconomic projections have failed to come to fruition, compounds this negative assessment. Probably the most unfortunate aspect of the evolution of the economy since the adoption of GEAR in 1996 is the continued shedding of formal sector

employment, one consequence of which has been an increasing embrace by the government of informal sector self-employment as an engine of job creation. Unfortunately, government's efforts to provide direct assistance to the informal sector through promotion of micro-finance and the setting up of advice centres have not shown impressive results.

The original thinking around the Poverty Alleviation Fund was apparently to balance the impact of GEAR, even though the public perceptions indicated hostility towards GEAR and to the closing of the RDP Office. The way the Fund worked was that national government departments were invited to submit proposals in the form of ‘business plans’ to the National Treasury, which evaluated the submissions and then made recommendations to Cabinet.

The process had in theory independent of departments' normal budgeting cycle, in part because the departments were meant to be requesting money for functions that they would not otherwise perform or have not traditionally budgeted for. Indeed, one of the original stated rationales for the Poverty Alleviation Fund was to "assist provinces in re-orienting their services to the poor.” However, in practice much of the Poverty Alleviation funding went to departmental projects that were co-funded through departmental budgets.

Wetland refers to land that has the water table at, near, or above the earth surface. It is also land that is saturated long enough to promote aquatic processes and various kinds of biological activity adapted to the wet environment (Hirji et al., 2003: 311).

According to National Water Act (South Africa, 1998), wetland implies land, which is transition from terrestrial to aquatic systems where the water table is usually at or near the surface. The land is covered periodically with shallow water. Under normal circumstances, a wetland supports, or it could support, vegetation typically adapted to life in saturated soil.

Wetlands are a home to a variety of animals and plants. They are one of the most species-diverse habitats on earth. They are estimated to occupy around 8.6 million

square kilometres (6,4%) of the earth's surface, out of which about 4.8 million kilometres are found in the tropics and sub-tropics. Only in the 19th century, approximately 50% of the world's wetlands were lost. The major activities responsible for wetlands loss are urbanization, drainage for agriculture and water system regulation (Shine and de Klemm, 1999).

Wetlands and Religion

Apart from preserving fauna and flora, wetlands have cultural and religious functions. "South Africa has a high following of Independent churches. It is believed that the water lake has healing properties and the Zion Christian religion uses the water for rituals, ceremonies and cleansing" (Working for Wetlands, 2002).

In conceptualising the cultural and religions beliefs, the New Article on Faith, Development and Poverty makes interesting links on water being the central place in the practices and beliefs of many religions for two main purposes. Firstly, since water cleanses and washes away impurities and pollutants, it can make an object look as good as new and wipe away any signs of previous defilement.

Water not only purifies objects for ritual use but can also make a person clean, externally or spiritually, ready to come into the presence of his or her focus of worship (Abrams, 1999). Secondly, water is a primary building block of life. Without water, there is no life. Yet water has the power to create and destroy. We are at the mercy of water just as we are at the mercy of our God or gods. The significance of water manifests itself in various in different cultures and religions, giving water a central place in cultural beliefs and faiths.

The Wealth of Wetlands

We use a wealth of natural products from wetlands, including fish, berries, timber and wild rice as well as medicines derived from solids and plants.[4] A world

4The topography of the Luvuvhu/Letaba WMA, Water Management Area, varies from a zone of high mountains in the west through low mountains and foothills in the central part of the WMA to the low lying plains in the east. The mountainous zone or Great Escarpment includes the northern portion of the Drakensberg mountain range and the eastern Southpansberg, which both extend to the western parts of the water management area, and the characteristic wide expanse of the Lowveld to the east of the escarpment. The highest peaks have an elevation of more than 2 000 m above mean sea level (msl). This zone is deeply incised by the major tributaries draining the WMA. The low-lying plains cover most of the WMA and have gentle to flat slopes.

conservation union (IUCN) study demonstrates the high economic value world's wetlands. The Muthurajawela Wetland in Sri Lanka provides benefits at a total value exceeding about US$ 7.5 million per year. This is in spite of the fact that we often think of the conservation of wetlands as an uneconomic use of land.

IUCN studies in Africa, Asia, and Latin America have shown repeatedly that wetland goods and services actually have a very high value and this underlines the need for their conservation and sustainable use as stated by Emerton (IUCN, 2003). In South Carolina, a 1990 study showed that, without the Congaree Bottomland Hardwood Swamp in South Carolina, the area would need $5 million wastewater treatment plant (Wetlands and People, 2003).

Moreover, wetlands have recreational, historical, and scientific values. More than half of all U.S. adults (98 million) hunts, fish, watch bird, and photograph wildlife. They spend a total of about $59.9 billion annually (Wetlands and People, 2003). Wetlands, though, face the threat of destruction:

> Even though wetlands have many benefits to society, such as purifying water, controlling erosion and providing habitat for wetlands dependent species, they continue to be destroyed and poorly managed. This is because the benefits are poorly understood (Booklet I) or they benefit people distant from the wetland. In order to begin improving the management and protection of wetlands, one needs to have a better understanding of how wetlands function (Wetland-use Booklet 2).

Sustainability in the global_arena is considered primarily in terms of continuing to improve human well-being> The view that we must not undermine the natural resources on which future generations will depend-- and hence sustainability-- is obvious. However, the challenge is whether something continues to work over time. For a water service, this would mean that water continues to be available for a period, for which it was designed, in the same quantity and at the same quality (Abrams, 1999: 3).

The popularisation of_sustainable development started with the United Nations Conference on Environment and Development (Earth Summit, 1992). The

conference was prompted by the report 'Our Common Future' (1997), World Commission on Environment and Development, also known as the (Bundled Commission), which called for strategies to strengthen efforts to promote sustainable and environmentally sound development. A series of seven UN conferences followed on environment and development, as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainability implied that "we seek ways of living, working and being that enable all people of the world to lead healthy, fulfilling, and economically secures lives without destroying the environment and without endangering the future welfare of people and the planet." Many people reject the term sustainable development as an overall term in favour of sustainability. They would rather reserve sustainable development only for specific development activities: the former being the process by which we can achieve the latter.

Sustainable development is further seen, for example, in the labour markets and employment in southern Africa as "a means of executing a growth and development strategy for managing natural, physical, human and financial resources and assets, to enhance long term wealth and well-being of society without compromising the needs of future generation" (The employment, Poverty and Development Nexus, 2003). This conception would require promoting in an integrated manner the environmental, social and economical objectives, while at the same time striking a delicate balance among all the three factors. There is thus a consensus that sustainable development has at least three pillars, namely, environmental conservation, social protection and economic growth and development.

Natural resources are the basis for human survival. People depend on them for their daily use (Hugo *et al.,* 1997). Because it is inevitable that an indiscriminate use of natural resources will ultimately precipitate their destruction, the conservation of such resources is crucial. Since human perceptions of the living world are mediated via their cultural understanding of what the living world means the impact, which human beings have on, their environment is also driven by such cultural understanding (Hannibal, 1997). One cannot understand the symbiosis between any

specific group of human beings and nature without understanding their cultural and historical attitudes to the natural world.

As is the case with most other cultural groups in South Africa, conservation and the management of the environment in the Venda culture has not been fully explored. According to Chid Mayo (1993), “Western approaches have (by default) come to dominate conservation policy and methods in Africa.” Thus, conservation policies in Venda are largely of Western origin.

The International Perspective

The major changes in the way the issues of economic growth, human development, and environmental protection are approached can be highlighted through the outcomes of two major United Nations conferences. The Conference on the Human Environment, held in Stockholm in 1972, provided the first major discussion of environmental issues at international level. The subsequent increase in public awareness and understanding of the fragility of the environment was one of the most successful outcomes from Stockholm. (UNDP, 2002)

However, while it succeeded in placing environmental concerns on the international political agenda, the environment remained a marginal issue. In particular, little was done to give practical effect to the integration of environment and development in economic policy and decision-making. The health of the planet continued to deteriorate at an unprecedented rate (Wynberg; 1993: 1).

The second major discussion of environmental issues at international level occurred at the United Nations Conference on Environment and Development (UNCED), held at Rio de Janeiro in 1992. Whereas Stockholm adopted an issue-oriented approach to pollution and non-renewable resource depletion, Rio emphasised integrated strategies to promote human development through economic growth based on the sustainable management of the natural resource base (Report of the Secretary-General, United Nations, 1997).

Given its ambitious agenda, UNCED may not have achieved all of its objectives. However, among some of its successes included the recognition of the mutual

dependencies between North and South and wide acknowledgement that the causes of environmental decay are more significant than the effects (Wynberg, 1993: 4).

New pathways were opened for public participation in intergovernmental communications, allowing for increased communication and cooperation between governmental and non-governmental organisations. Indeed, Rio provided a clear role and responsibility for all sections of society, with the recurring message that 'real change is most likely to come with the involvement of ordinary people' (Wynberg, 1993: 1).

Agenda 21, the action plan that emerged from the UNCED process, represents a statement of willingness to strive for a form of development that recognises the linkages between economic growth, social equity, and protection of the environment. This agenda clearly identifies 'information', 'integration', and 'participation' as key building blocks to help countries achieve development that recognises these interacting factors.

It emphasises that in sustainable development everyone is a user and provider of information. It stresses the need to change from old sector-centred ways of doing business to new approaches that involve cross-sectoral coordination and the integration of environmental concerns into all development processes. Furthermore, Agenda 21 emphasises that broad public participation in decision-making is a fundamental prerequisite for achieving sustainable development. Rio was followed by the World Summit on Sustainable Development (WSSD), in Johannesburg, South Africa in August-September 2002.

The Local Perspective

South Africa needs to manage its water resources optimally in order to further the aims and aspirations of its people. This is enshrined in the Constitution.

The NWA of 1998 is the principal legal instrument relating to water resource management in South Africa. Other recent legislation, which supports the NWA,

includes the Water Services Act (Act 108 of 1997) and the National Environmental Management Act (Act 107 of 1998).

According to the South African State of Rivers Report on rivers Letaba and Luvuvhu,

> Lake Fundudzi lies in the upper Mutale River. Debris, caused by a landslide blocked the valley floor, creating the lake. The Mutale River re-emerges as a spring from below the blockage. Subsistence farming is the dominant form of agriculture in the Mutale Catchment. Almost all the agricultural activities in eco-region 2.01 and eco-region 5.04 are associated with subsistence farming.[5]

Apart from the Acts, there are strategic guidelines, as follows:

The National Water Resource Strategy (NWRS)

The NWRS is the implementation strategy for the NWA and provides the framework within which the water resources of South Africa are to be managed. All authorities and institutions exercising powers or performing duties under the NWA must give effect to the NWRS. This strategy sets out policies, strategies, objectives, plans, guidelines, procedures and institutional arrangements for the protection, use, development, conservation, management and control of the country's water resources (The National Water Resource Strategy, 2003).

National Economic and Policy Frameworks: the RDP, NGDS and GEAR

Before the non-racial democratic elections of 1994, the ANC published a policy document for the Reconstruction and Development Programme (RDP) that identified the number of areas to be transformed in South Africa. The central theme of the RDP was the reduction of poverty of the majority of South Africans, redressing the inequalities and injustices of colonialism and apartheid. Access to basic services like; water, jobs, land, education, and health care, were among the priorities that were highlighted in the RDP (RDP, 1992).

---

5 According to the Department of Water Affairs and Forestry Directorate National Water Resource Planning (North) Internal Strategic Perspective on the overview of the Luvuvhu/Letaba Water Management Areas: It says, "The Luvuvhu/Letaba Water Management Area (WMA) is located adjacent to and shares watercourses with Zimbabwe and Mozambique, and the Limpopo River demarcates the northern boundary of the WMA. The Kruger National Park (KNP) lies along the eastern boundary, and occupies approximately 35% of the Water Management Area.

Importantly, the RDP policy framework highlighted the multiple connections that exist between poverty, environmental degradation, and people. Apartheid legislation distorted access to natural resources by denying the majority of South Africans the use of land, water, fisheries, minerals, wildlife, and clean air. Again, the South Africa's apartheid policies contributed to the degradation of environmental resources, including soil, water, poverty and environmental degradation. The founding document of the RDP explicitly embraced a principle of sustainable development.

The democratic government of South Africa has a responsibility to ensure that all South African citizens, present and future, have the right to a decent quality of life through sustainable use of resources. To achieve this, the government must work towards equitable access to natural resources, safe and healthy living, and working environments, and a participatory decision-making process around environmental issues, empowering communities to manage their natural environment. Therefore, that the fate of the country's attention to people-centred sustainable development is in part reflected in the fate of the RDP.

After the April 1994 elections, an RDP Office was established within the Office of the President, given the responsibility of coordinating RDP-related activities, including the spending of the initially low poverty relief budget. In November 1994, the new government introduced the *RDP White Paper,* the content of which was similar to that of the earlier policy framework document, but arguably more 'business friendly' and fiscally very conservative. One of the important tasks of the RDP Office was the coordination of the National Growth and Development Strategy (NGDS), which was initiated in mid-1995 on behalf of the President's Office (Growth and Development Strategy, 1995).

The purpose of the NGDS[6] was to harmonise the activities of all of the government departments and provinces, by getting each department and province to subscribe to a common set of goals˜ the six 'core pillars'˜ and to indicate in what fashion it would meet those goals, and with what resources (Growth and Development Strategy, 1995).

Although the pre-1994 South African government attached considerable significance to the conservation of natural environments, its approach required exclusion of local people from the environmentally protected areas converted into parks and reserves —i.e. to serve conservation and recreational interests. The impact of these protected areas on the culture, livelihoods, and environments of local people did not receive much attention.

The communities that were removed were often resettled on inferior land (according to apartheid group areas or outside the proclaimed parks), where previous livelihoods could not be sustained, and crowded conditions led to further degradation of the land. This series of events served to reinforce the already prevalent view that poor people affect negatively the environment. The faulty logic is that environment can only be protected by the exclusion of these people. The fact that poverty was often exacerbated because of already depleted or inferior environments and the hidden costs of large-scale industrial exploitation was largely ignored. A better understanding of the relationship between environment and poverty needs to take into account the complex relations existing within each system respectively.

The environment is composed not only of ‘things’ but also more importantly of the relations between them. Ecological relatedness of organisms is one example of how people relate to their environment. Environmental degradation occurs because of

6 The six core pillars of the NGDS' were; to invest in people, creating employment, investing in household and economic infrastructure, crime prevention, poverty alleviation and the creation of safety nets, and transforming institutions of governance. As such, the NGDS was not a macroeconomic strategy, but an institutionalisation of an integrated policy-making process geared to the realisation of the principles of the RDP. Among its other virtues, the NGDS established a forum wherein departmental officials at various levels could discuss amongst themselves their goals, strategies and needs, thereby allowing for the possibility of integration and coherence that, arguably, the government has since been struggling to regain.

skewed power relationships where environmental resources are used faster than nature produces them.

The potential for environmental degradation is therefore inherent in human existence (people sustain their living from the environment) and this is not a recent phenomenon. Nevertheless, the current pace and global scale of environmental degradation is unprecedented. Similarly, poverty can be understood as a system of relationships, which have the cumulative effect of excluding people from processes of development and accumulation. Skewed power relations and economic, political, or social injustices that deny people access to empowering resources such as safe water, health services, or education can be contributing factors.

The viability of people's livelihoods is often largely contingent on relationships that ensure the continued access to environmental resources. Such continued access, however, requires not only the sustained provision of resources but also the just and equitable access to them. Sustainable development can be thought of as a pattern of relations between people and between people and the environment that will ensure, and not undermine, future development.

The form that sustainable development needs to take in order to benefit both people and their environment is through interactions that are desirable or necessary to maximise mutual benefits. The interface between poverty and environment is multi-layered and complex, often appearing as self-perpetuating cycles or escalating down-spirals. For example, many poor rural South Africans are living on inferior land. In their attempt to earn a living, they contribute to the downgrading of their environment. The depleted environment exacerbates prevailing poverty, which in turn puts more pressure on the environment. Such cycles are hard to break and even more difficult to reverse.

Although the roots of community-based management can be found in ancient pre-colonial practices, the recent shift from top-down exclusionary management to community-centred conservation has been gradual, and only really escalated in the last two decades. The switch to Community Based Natural Resource Management (CBNRM) was prompted by a gradual realization of the fundamental flaws of

previous strategies, donor pressure, national economic crises, which slashed funding for protectionist policies, democratization, and the recognition of the inherent rights of rural people (Child, 1996b; Larson, Freudenberger, and Wyckoff-Baird, 1997; Lewis and Carter, 1993).

Opinion is divided on CBNRM. Some argue that CBNRM programs have in general made limited progress toward their twin goals of conserving natural resources and improving human standards of living (Gibson & Marks, 1995; Hackel, 1999; Southgate & Clark, 1993), others claim success for specific projects (Bodmer, 1994; Lewis & Alpert, 1997; Metcalfe, 1994). Some CBNRM programs have been successful; others have struggled to achieve their goals.

CHAPTER 3

THE RESEARCH DESIGN AND METHODOLOGY

The specific design selected is an ethnographic study with an emphasis on stakeholder analysis through observation and documents and questionnaires. Community empowerment studies call for specific methodologies that bias towards the ethnographic grain. On this, Hall thinks that

> 'Nowadays, as the demand for community empowerment in the field of environmental management increases, it has become necessary to explore other approaches'. It is desirable that such approaches focus more clearly on the human dimensions of environmental conservation and management (Hall, 1999).

The Natural Resource Institute at the University of Greenwich at the Department of International Development has developed Stakeholder Methodologies in Natural Resource Management (DFID) (DFID, 2000):

> Stakeholder analysis can be defined as a methodology for gaining an understanding of a system, and for assessing the impact of changes to that system, by means of identifying the key stakeholders and assessing their respective interest. Stakeholders may equally include development practitioners, policy makers, planners, and administrators in government, commercial bodies, or non-governmental organizations (Grimble, 1998:1).

The fundamental division between stakeholders would be those who affect an action or those who are affected by a decision or action. Stakeholder analysis distinguishes between conflicts and trade-offs. For Ramachandra, the Restoration and management strategies of Wetlands in the Developing Countries shows that about 80% of the local residents are dependent on the water resources either directly or indirectly, for irrigation, domestic needs (ground water), fuel and fodder.

Most of the research on Sustainable Development, particularly on Wetlands, or Natural Resource, is of quantitative. This study adopted a qualitative approach.

The strengths of the qualitative paradigm are such that it:

I) Studies people in terms of their own understanding or perception of the world or realities.

II) It focuses on the subjective experiences of individuals.

3.1 THE STUDY POPULATION AND SELECTION OF CASES

The minimum requirement for interviewees was that they were persons benefiting from Lake Fundudzi in one way or another. We selected the Tshiavha, Thononda and Tshiheni tribal villages as an area for the study because its inhabitants live in the kind of rural circumstances. They are more likely to have preserved the traditional cultural values, beliefs, norms, and customary practices of the Vhavenda. More importantly, they are the direct beneficiaries of Lake Fundudzi. Generally, the people in this area still practise subsistence modes of existence and depend on available natural resources for their daily survival.

The surrounding communities have therefore preserved traditional knowledge and different methods of natural resource conservation, usage, and management. Some of this knowledge might have been lost to those Vhavenda who have particularly moved to urban and peri-urban areas and are somewhat westernised.

3.2 DATA COLLECTION AND ANALYSIS

We began analysing data whilst interviews and observations were underway. Rubi, (Rubin, 1995: 226-227), as cited in Mouton (), says, “Data analysis begins while the interview is still underway.” This preliminary analysis informed the redesigning of the question and the focus of a central theme as we continued to interview people. Afterwards, we engaged a more detailed and fine-grained analysis of what the conversation partners said and what we observed in the field.

3.2.1 Stakeholder Analysis

We invested a lot of time in Stakeholder Analysis. It gave us an indication on the different stakeholders within the Lake Fundudzi[7] and on the Sustainability Check List. The study used qualitative interviews in an attempt understanding better the cultural, environmental, and economical benefits of the lake.

7 The main rivers in the WMA are the Luvuvhu, Shingwedzi and Letaba rivers, which all flow in an easterly direction through the Kruger National Park and into Mozambique before discharging into the Indian Ocean. The Shingwedzi River first flows into the Rio des Elephantes (Olifants River) in Mozambique, which then joins the Limpopo River. The two main tributaries of the Letaba River, the Klein and Groot Letaba, have their confluence on the western boundary of the Kruger National Park, whilst the Letaba River flows into the Olifants River just upstream of the border with Mozambique.

We also used documentation and statistical information about the area such as the Local Integrated Development Plans and Local Development Initiatives, Government legislation and International conversion. The combined methodologies provided an observation of community throughout the study.

3.2.2 Questionnaire

We also used a questionnaire, whose title was “Questionnaire on Community Participation on the Sustainable Development of Lake Fundudzi Rehabilitation Project.” The questionnaire was conducted in the three main villages that benefit directly from Lake Fundudzi, namely, Tshiavha, Thononda and Tshiheni.

The Questionnaire had seven sections, Section A, was on the basic information on the household or organisational identification. Section B had the profile of the community. Section C had the provision and quality of services. Section D covered the communication in the community and how the structures link with the broader community members in relation to the Lake Fundudzi development. Section E dealt with the perceptions around the conservation of Lake Fundudzi. Section F dealt with the role and status of women in the community. Section G dealt with any additional information that participants may have added regarding development in the community.

We used the questionnaire mainly to impose structure on the questions. Most of the questions were open ended. We used quantitative information in the form of statistics mainly as secondary data on the community profiling.

CHAPTER 4

PRESENTATION OF RESEARCH FINDINGS

The study was done on community participation concerns in the sustainable development of Lake Fundudzi rehabilitation project. The motivation was that Lake Fundudzi has strong cultural, religions and socio-economic benefits to the surrounding communities.

The specific objectives of the research were:

i. An assessment of the Development/Community dynamics and the role that different stakeholders play at Lake Fundudzi.
ii. An evaluation of the Social and Cultural beliefs around Lake Fundudzi, as water has a central place in the beliefs of many cultures and religions.
iii. An assessment of the economic benefits of Lake Fundudzi to the community, as wetlands goods and services might have high value.

We asked the following subsequent questions:

I) Who were the different stakeholders in the development of Lake Fundudzi?
II) What were the Socio-Economic benefits of Lake Fundudzi to the surrounding communities?

4.1 LAKE FUNDUDZI AND THE PEOPLE'S PERSPECTIVE

According to a study by the Department of Finance and Economic Affairs[8] land-use categories in the catchments can be classified as follows:

Natural Areas: 45.45%
Plantations: 22.61%
Agriculture: 10.36%
Disturbances: 8.8%
Unidentified: 4.96%
Residential: 3.44%
Lake: 2.10%
Woodlots: 0.98%
Firebreak: 0.91%
Orchards: 0.39%

Natural areas extend over 2744 ha. It is the largest single land use category in the area. These areas are mainly situated around the lake, isolated areas in the plantations, and small areas in the developed areas. The lower parts of the catchments of the lake are therefore still in a natural state. There is a developed and degraded area in the northern and western sides of the catchment. There are plantations in the southern side of the catchment, natural areas in the eastern and central areas of the catchment, and aquatic areas that include the lake, wetlands and all other rivers.

The majority of developed or disturbed areas are located in the upper catchment of the three sub-catchments of the lake.

8 Shaikh S. Land use in the Lake Fundudzi Water Catchment Area. Project "Land use planning for Lake Fundudzi" of the Department of Finance and Economic Affairs: Chief Directorate Environmental Affairs, 2002.

Agricultural practice is characterized by dry land agricultural farming with a small but increasing number of orchards and commercial forestry activity. Agricultural activities are also being practiced at the mouths of the Gondoni and Govha Rivers above the high water mark. Annual crops like maize are intercropped with pumpkins and beans. Homesteads and urban settlements have large yards in which crops are cultivated. Animals are used for the cultivation of these lands.

There are noticeable diversions of river water through mud canals to supply water to vegetable gardens along the river valleys. Areas that are not cultivated due to rocks or steepness are used as grazing areas for livestock during certain times of the year.

Communities use a communal land tenure system that depends on summer rainfall to plant one crop of maize per annum. There is an increasing demand for orchards. Thus, the government and traditional authorities approves this activity in delicate ecosystems. At full supply, it is more than 3 km long with a surface area of 144 ha, and a maximum depth of 27 metres at an elevation of 865 metres above sea level. Water level fluctuates considerably.

The lake was full in 1978, in March 1996 and in March 2000 --when waters actually rose three metres above the established tree line, causing many trees on the edge of the lake to die), following particularly wet summers. It was empty (covering less than 50% of full level surface area with water not reaching the Mutale inflow on the southern side in the middle of the lake) in 1960's, 1992-1993 and 2003. The Lake is fed by three streams the Mutale or Mavhidzelele, Gondoni and Muiladi, draining a total catchment of more than 6000 ha.

The Mutale catchment has a higher elevation (up to 1438 metres above sea level), receives a higher rainfall (>1200 mm per year) and is well vegetated (plantations and indigenous forest). Accordingly, it may have the highest runoff and greatest influence on lake level.

The lake level is dependent on the balance between surface inflow and underground seepages through the rock fall barrier. The outflow rate seems to increase with a

rise in water level. A prominent tree line at 865 metres above sea level indicates the full water level of the lake. This line is 18 m below the lowest point of the rock fall. Thus, there is no immediate threat that the Lake may carve a new outlet over the top of the barrier and erode it away. The rock fall barrier itself consists of enormous loose boulders with little signs of soil formation on the top, possibly due to the nature of the hard quartzitic rock from which the landslide is formed (Working for Wetland, 2002).

Poor planning of infrastructure such as roads has increased the susceptibility of soil to erosion. Agricultural activities along the rivers are close to the high water mark. A portion of the lake that is covered by the water during the rain season is used for vegetable production during winter months.

Communities in the catchment areas are dependent on annual crops and these require regular ploughing. This continuous cultivation loosens the soil, increasing its susceptibility to erosion. The catchment area is situated in steep and rocky slopes that make the uses of machinery for ploughing ineffective. Farmers therefore keep livestock (cattle or donkeys) to assist in the cultivation of their lands. In summer, livestock graze in mountain areas and feed on straw and maize remnants during winter months, decreasing the ground cover required to stabilize soil. Depleted ground cover reduces penetration of water during rain, consequently increasing soil erosion (Working for Wetland, 2002).

4.2 SOCIO-ECONOMIC CONDITIONS

Here we describe the general socio-economic condition of the local municipality, identify community needs and institutional challenges of wetland rehabilitation program.

4.2.1 General Profile of Thulamela Municipality

The Lake Fundudzi belongs administratively to the Thulamela Municipality. In order to understand the socio-economic trends that affect the local population the following information is pertinent (see Integrated Development Plan).

Water Services in Thulamela Municipality:
Households provided with acceptable levels of water services: 87%
Households in need of acceptable levels of water services: 13%

Sanitation in Thulamela Municipality:
Households provided with acceptable levels of sanitation services: 7%
Households in need of acceptable levels of sanitation services: 93%

Energy in Thulamela Municipality:
Households provided with acceptable levels of energy services: 33%
Households provided with acceptable levels of energy services: 67%

Household Size
Average Household size is 5.28 people per household

Education
Individuals that have received education: 57%
Individuals that have not received education: 27%

Any strategy to include the community in the rehabilitation of the wetlands will need to incorporate the critical needs of the people having as a development outcome the improvement of those conditions.

Lake Fundudzi is a sacred place surrounded by five Vhamusanda (Chiefs) under the (Thovhela) higher chief Tshivhase. Of these five chiefs, only the custodian of the lake together with members of his tribe, worships and practises religion at the lake. The Venda region is not really united under a king. Rather, it is divided into a number of chieftainships. Attempts were made in the past to unite them under one king or president (Mpephu). Even today King Kennedy Tshivhase strives for that imagined top leadership position (Khorombi, 2000).

Traditionally there was common consensus concerning the places that could be accessed and the practices that could be performed near the lake. The chiefs and the community in all the villages surrounding the lake observed these practices.

Today, increasing population pressure and a general breakdown of traditional ways of living presently threaten the lake and its surrounding environment. The catchment area is under tremendous pressure to support and sustain all the villages with the associated escalating requirements (Khorombi, 2000).

There are an increasing number of people involved in farming practices such as planting of orchards and keeping livestock. Most afromontane forest remains are at burial sites (Zwitaka) or areas that are difficult to access.

During the 1980's village headpersons were encouraged to develop woodlots in their areas by the then Department of Agriculture, Lands, and Environment. Natural forest and bush were removed for the gum plantations at Thononda, Khakhu, Phungoni and Tshiavha. Given that gums transpire large quantities of water, it would prove to be difficult to convince headmen and communities to do away with these woodlots.

Electrification is incomplete. Numerous people depend on wood collected in the catchment area for fire. Due to the increased population pressure, wood is becoming scarce. This results in the cutting of living trees. There is high unemployment, which forces people to depend on the natural resources for survival. Typical use of the natural includes small-scale commercial fishing, tourist souvenir, or crafts made from the indigenous wood, hunting, subsistence dry-land agriculture, and diversion of the streams to irrigate vegetables.

Here below is what some respondents thought were the shortcomings in an earlier study in the area (Khorombi, 2000).

Table: 1 Infrastructural shortcoming in percentages.

Shortcoming infrastructure in area	Percentage
Roads and transport facilities	37,5
Water supply	27,0
Electricity	20,4
Communication system – phones, post office	4,6
Employment	4,6
Clinic	3,9
Shops	1,3

The local community feels the lake is important although they do not benefit directly from it. (Khorombi, 2000) did a study of attitudes of inhabitants of villages in the catchment towards the lake and found that 73% believe the lake is important to them. Only 14 % gave a negative reply and 13% considered the lake not important anymore. The Tshiavha royal family and other members of the Tshiavha clan said that the lake is directly associated with their culture and traditions. However, the other community members could not cite any specific cultural activity they performed in connection with the lake.

The survey indicated that just over 50% feel the lake needs protection. Aspects that require protection are over fishing by nets, drowning of animals and people in the mud, burning and cutting of vegetation along the lake, pollution by garbage, soil erosion, and control of animal access to the lake. Those who did not consider that the lake needed protection said: the ancestors or Zwidudwane will protect, it is a natural feature created by the gods. These perceptions can be used as a basis for a proper, declared conservation area or park. Therefore, the community is aware of the impact people have on the lake. They are more or less forced to continue with overexploitation. There is also very little law enforcement and local chiefs have largely lost their ability to prosecute offenders.

4.2.2 Institutional challenges (Working for Wetland Program)

Previously, the local headmen supported the department of Nature Conservation and applied regulations within their areas. With the new dispensation and democratisation, local communities are more reluctant to subject themselves to tribal rules. Poor communication between tribal authorities and the Department of

Environmental Affairs exacerbated the situation and so local people exploit the present situation. Conservation extension officers had a regulating function in the catchment without consulting local headmen. This resulted in conflicts about fishing licenses and size of fish caught in the lake (Khorommbi, 2000).

In a questionnaire on perceptions about Lake Fundudzi, local people cited fish as the main value of the lake (Khorombi, 2000). Many people living in the catchment of the lake see fish as an important asset. Nevertheless, there seemed to have been some conflicts between certain chiefs. Some local people feared that over fishing was taking place. Yet the Department of Environmental Affairs --or rather their predecessors, the Venda Nature Conservation department, who demanded fishing licences-- did not allow fishing in the lake.

The Department of Agriculture, Land, and Environment (DALE) nature conservation section (as a responsible Department that can issue directives) is seen as the main form of law enforcement. It can issue directive prohibits people from harvesting wet wood, hunting and cultivating steep areas or riverbanks. The Department of Agriculture has adopted a softer option to encourage local communities to farm with little or no emphasis on conservation or on any sustainable practices. The agricultural extension officers' main objective is to advise on the latest production practices available in order to maximize the production. Therefore, when people are clearing the land (natural forest) for agricultural purposes-- even if it is in a steep area or close to the river or any other sensitive area--they will still receive advice from agricultural extension officers with no caution of the environmental hazards their action may cause(Working for Wetland, 2002).

The Lake Fundudzi catchment is composed of three sub-catchments, the Mutale River, the Goony River, and the Muiladi River. In the Mutale sub-catchment, 7 wetlands have been identified, in the Godoni and Muiladi sub-catchments 3 and 1 wetlands were identified, respectively. The main problems found in each of the sub-catchments, on the preliminary study done by the Working for Wetland assessment are as follows.

Mutale River Sub-catchment

The main problems found in the wetlands of this sub-catchment include:

- Presence of alien vegetation.
- Tourism roads that cause erosion.
- Overgrazing and wrong burning regimes.
- Poorly managed afforestation activities.
- Seed dispersal from nearby exotic vegetation.

Probable causes of the problem

- Overgrazing and the wrong burning regime – exotic species invade affected wetland and displace natural indigenous plant species.
- *Pinus*- and *Eucalyptus* species escaped from the formal planted areas and can invade the wetland. This has a strong negative effect on the habitat value of the wetland.
- Some exotic species may proliferate because of poor managed afforestation activities.

The objectives of the rehabilitation of Lake Fundudzi by the Working for Wetland team are:

- Prevent erosion (prevent the unnatural degradation of this wetland).
- Improve the ecological integrity and health of the wetland.
- Restore the hydrological regime of the wetland.
- Lift water table to compliment the protection of peat.
- Increase the water storage, flood attenuation, and base flow maintenance.
- Increase the sedimentation and filter capabilities.
- Prevent territorialisation to take place.
- Restore the biodiversity to its natural state.
- Assist in eliminating poverty through job creation.

Godoni sub-catchment: Description of the Problem

The upper portion of this catchment is dominated by community settlements and associated activities. Rural agricultural development is on the increase. Roads are unattended to and are deteriorating, resulting in serious erosion. Side channels

drain the main body of the peat wetland--what with overgrazing and the wrong burning regime. This results in extensive cracks on the surface of the peat. The drying out of the peat is accentuated by wilting of surface vegetation. Cracks and ash are clear indicators of drying out conditions.

Probable causes of the problem
On site: Water collecting point, Overgrazing, and trampling and Community garden activities.

Off site: Trampling in the direct catchment, Footpath leading to disturbed area.
Planted crops, Human settlement close to disturbed area.

Muiladi sub-catchment
Problem Description
Community settlements and associated activities occur in the upper portion of this catchment. Rural agricultural development is on the increase. There is gardening within the wetland area, which disturbs the key point. Lowering of water table arising from subsistence farming.

Probable causes of the problem
Overgrazing and trampling in the direct catchment, wrong burning regime, gardening occurring on the edges of the wetland, poverty, ignorance (no set plan and guidance). Human activities (roads, footpaths, settlements, etc.), increase land pressure through slash and burn processes and gardening against steep slopes adjacent to the wetland.

Integrated Development Plan (IDP) of Thulamela Municipality
In order to gain legitimacy with local authorities the project has aligned with the IDP for the Thulamela municipality and the province. At the same time, the detailed wetland rehabilitation plan is serving as a valuable tool and guideline to work with the community in terms of consultation and participation (Working for Wetland, 2002).

The IDP is not specific in terms of the concrete projects and programs that are going to be implemented. It defines broad areas, guidelines, and strategies. The following were aspects of the IDP that were in line with the Rehabilitation of the Wetlands project.

The vision[9] for the municipality incorporated the development of tourism. The lake has the potential to become a tourism destination if it is managed ecologically and can incorporate eco- and cultural- tourism. The rehabilitation of the wetlands will comply with this need. At the same time, the vision incorporates the satisfaction of basic needs of the community in a sustainable manner. The process of the rehabilitation of the wetlands should incorporate the active participation and education of the community and a plan to improve the living standards of the population through the ecological use of resources.

The IDP "the Localized Strategic Guidelines for cross-cutting dimensions are neither supposed to replace the elaboration of the Strategies, focused on Priority Issues, nor to supplement them. Instead, the Localised Strategic Guidelines informed the strategising and the project planning process."[10]

The Rehabilitation of the Wetlands Project will need to take into consideration the following guidelines in alignment with the IDP:

- Environmental guidelines, Minimizing and remedying negative impacts on the environment and on people's environmental rights; Considering the consequences of the exploitation of non-renewable natural resources;
- Avoiding jeopardizing renewable resources and ecosystems; Paying specific attention to sensitive, vulnerable, highly dynamic or stressed ecosystems;
- Minimizing loss of biological diversity; and avoiding disturbance to cultural heritage site and Poverty alleviation, creating opportunities for all to sustain themselves through productive activity;

9 "We, the people of Thulamela would like: Our Area to become a tourist destination and a productive agricultural area; and Our Municipality to provide basic services to all our communities in a sustainable manner and to create an enabling environment to improve the quality of life of all our people.

10 Thulamela Local Municipality. Integrated Development Plan. May 2002

Spatial development principles include: Spatial integration; Diversity of land uses; environmentally sustainable land development practices; Discouragement of land invasions (without ignoring the reality of informal land use processes); equitable access to land; and Tenure security.

The Rehabilitation for the Wetlands project should be incorporated in the drafting of a 5 year Action Program of the IDP. This will facilitate the institutional arrangements, participation of government and communities.

EROSION

Erosion in the catchment of Lake Fundudzi is a very complex problem integrating social issues such as the development of villages; deforestation and crop production along steep slopes are some of the major issues to address. The average slope is 1:7, which gives an indication of how steep the area is. Villages have been developed along the steep slopes in the catchment of the lake and widespread cultivation and general environmental disturbance occurs.

Erosion from roads in village areas and major access roads are the main contributing factor of concentrating runoff. Roads in plantations and indigenous forests are to a lesser degree. Control measures are in place to divert storm water from the roads into the plantations and forests where ample leaf litter and well-drained soils allow storm water to drain rapidly into the soil and to be filtered before entering the streams.

Storm water diversion structures are missing in the village roads, the roads act as storm water runoff channels during periods of heavy downpours, leading to erosion and the siltation of streams and rivers and ultimately the Lake itself.

The Stakeholder Methodology in Natural Resource Management

Most of the discussion about poverty eradication and sustainable development has hitherto been at the level of conceptual frameworks. However, we suggest a particular type of intervention that directly seeks to address sustainability and poverty eradication tangibly and together, namely, conservation-oriented public works programmes. Two such programmes are the Working for Water Programme of the Department of Water Affairs and Forestry, and the Land Care Programme of the National Department of Agriculture (see Box 2).

The RDP policy framework from 1994 anticipated such programmes: "There must be a coordinated national public works programme to provide much-needed infrastructure, to repair environmental damage, and to link back into, expand and contribute to the restructuring of the industrial and agricultural base" (CASE, 2000).

The Working for Water Programme and the LandCare Programme are variations on a theme. They consist of interventions aimed at preventing or reversing environmental degradation. Participants are paid a wage in order to provide labour for the achievement of conservation tasks. There is a fair amount of attention to related activities such as training, skills transfer, and creation of value-added industries (previously know as Secondary Industries (CASE, 2000). Like the other main public works initiative, the Community-Based Public Works Programme[11], LandCare and Working for Water were financed in part through the Poverty Alleviation Fund (Refer to Box 2 Appendix).

11 The Community-Based Public Works Programme (CBPWP) is the major component of the National Public Works Programme of the Department of Public Works. For 2001/02, the CBPWP has been allocated about R280 million, out of R300 million for the whole National Public Works Programme. Somewhat similar to these public works programmes are various infrastructure programmes, most notably the Consolidated Municipal Infrastructure Programme (CMIP), the National Housing Programme, and Community Water Supply and Sanitation Programme (CWSS). Although these infrastructure investment programmes do have positive implications for employment, they are commonly not categorised as public works programmes because job creation is not a central goal, and labour-intensive methods may or may not be adopted. CMIP in particular, which was allocated a budget of almost R1 billion for 2001/02, consists mainly of budgetary support from central government to municipalities for infrastructure development, and not a particular model of delivery per se.

TABLE 2: Stakeholder level of interest, importance, and impact

Stakeholder group	Nature of Interest	Potential Impact	Relative importance of interest	Importance of Group*	Influence of Group #
Traditional Leaders	They have powers relating to traditional matters	Maintenance of culture and traditional matters	Power sharing between local government and traditional leadership is not very clear.	The community generally have a huge respect for the Chief	Traditional leaders hold a huge political/community power
Women	Hold the social responsibility e.g. collecting water, fetching wood and food gardens	They deal with crucial societal needs, like the provision of water and the overall well-being of families		Uphold of family values	
Local government i.e. Thulamela Local Municipality and Vhembe	They ensure that Intergraded development Plans are in place	They can spearhead development	Government intention on local development objectives need to materialise and be adequately resourced		
Development partners e.g. Working for Wetlands and Landcare	Objectives are catchment conservation, job creation and skills development	Liaise with research institutions and institution of higher learning for scientific and engineering developments	Meet their mandate in term of rehabilitation of the wetland/lake, transfer of skills and continuous monitoring.		
Key govt. Depts i.e. Deat, DWAF and Provincial depts.	Objectives of government is poverty reduction, upholding of environmental values and skills development	Ensuring adequate commitment through appropriate polices and adequate funding is accessed.	The management of Natural resources and community participation	Provide guidance regarding statutory and legal requirements.	Could influence how development should go.

Key:

- Indicate importance to the natural resource project *.
- Indicate importance and representation within local/national power structures and institutions #.

Literal Interpretations from the Questionnaire

Tshiavha village 1

B1. Name of the District: Vhembe

B2. Local Municipality: Thulamela

B3.Area and Type of dwelling: The Area is mainly rural, with farm homestead, comprising of huts

B4. The gender profile of the respondent:
29% of Men responded as opposed to 71% of Women

C1. The material of the walls of the houses was generally made out of mud.

C2. The sanitation method used in the community is mainly: Pit latrines

C3. The refuse removal method used is mainly to burn the rubbish.

C4. The sources of power mainly used are different depending on usage;
Candles are used mainly for lighting, Coal or wood for cooking, whilst some people use solar for Television (TV) and Radio.

C5. In this village Water is mainly sourced from Lake Fundudzi

D4. The development initiatives that are taking place in the community is mainly the rehabilitation of Lake Fundudzi.

D5. The community structures that informed the community/contractors about the development of Lake Fundudzi are the Traditional leadership.

D6 The cultural, spiritual and the myths about Lake Fundudzi is that it is a place for the Nethiavha's family, used for the purposes of giving thanks and praying to their gods.

D7. There are economic benefits that are derived from Lake Fundudzi.

D8. The economic benefits derived from Lake Fundudzi now are short-term employment.

D9. The Other benefits e.g. Agricultural, Social, environmental that are derived from the Lake Fundudzi are that: People us the water for the crops, and they collect wood from the nearest forest.

D10. On the opinion about the responsibility for maintaining the above projects when they are completed most people in the village agreed that it should be the community structure and possibly even the Netshiavha family, as they are the direct beneficiaries of Lake Fundudzi.

D11. Because they are the ones who know more about the lake.

E1. On the opinions about the importance of conserving Lake Fundudzi mostly responded by saying, they believe is important to conserve the lake because if the lake is not conserved, it could be filled with sedimentation and the lake will no longer be a lake but a dumping site rather.
F1. On the perception of the role and status of women in this community is said that: with the targeting in the Expanded Public works programmes, and with more community members being employed, more and more women are getting employed.

G1. On other comments about the development it was said that: Government needs to work more with the community on development projects.

In Conclusion; the Tshiavha community members believes that it is important to conserve the lake for the benefits of future generations and they also believe that maybe Lake Fundudzi could even help in alleviating poverty and job creation.

Thononda Village 2

B1. Name of the District: Vhembe

B2. Local Municipality: Thulamela

B3. In the Area the Type of dwelling: are rural homesteads with kraals and houses are mainly made out mud.

B4. The gender profile of the respondent: was that 42% of men participated in the interview as opposed to 58% of women.

C1. The material of the walls of the houses varied from traditional grass to brick and mud.

C2. The sanitation method used in the community is mainly: Pit latrine

C3. The refuse removal method used is mainly to burn rubbish

C4. The sources of power mainly used are; Candles for lighting, Coal and or Wood for cooking and Electricity for more lighting, Radio and TV.

C5. Water is mainly sourced from Communal tap and or standpipes

D4. The main development initiatives that is taking place in the community is the rehabilitation of Lake Fundudzi.

D5. The community structures that informed the community/contractors about the development of Lake Fundudzi are the civic organisation.

D6. The cultural, spiritual and the myths about Lake Fundudzi are that the lake has a place where no one is allowed to enter except the Netshiavha family. There is a place where the people who are not circumcised are not allowed to reach.

D7. There are economic benefits derived from Lake Fundudzi.

D8. The economic benefits derived from Lake Fundudzi are employment, which enables them to support their families.
D9. Other benefits, for example, agricultural, social, environmental that are derived from the Lake Fundudzi are: fishing which is for both consumption and any excess is sold, water is also used from the lake to maintain the crops, which are for subsistent livelihoods.

D10. On the opinion about the responsibility for maintaining the above projects when they are completed the general feeling was that it should be the community structure and particularly the Netshiavha family.

D11. Because the Netshiavha's are the custodian of the lake, they know more about the forbidden places and the community members closer to the lake could look after the heritage as well.

E1. On the opinions about the importance of conserving Lake Fundudzi are the community believes that the lake attracts tourist, and it makes the lake to be well known. There are also economic spin-offs as people sell their goods and this help with sustaining the community. The Netshiavha's if it is not conserved will loose their place of worship and cannot replace that with anything, as their gods and ancestors live there.

F1. On the role and status of women in this community is perceived to be that: the majority of women especially single headed household got preferences when it came to jobs, and this enabled them to get jobs.

G1. Other comments about the development were the needs identified were accommodation for the tourist, development of infrastructure particularly the roads, enhanced security and communication network like cellular and satellite coverage and information and technology.

In Conclusion, the community believed that the conservation on the lake will lead to more development and probably poverty will be alleviated.

Tshiheni Village 3

B1. Name of the District: Vhembe District

B2. Local Municipality: Thulamela Municipality

B3.Area and Type of dwelling was mainly a house on a commercial farm.

B4. The gender profile of the respondent was 48% of males as opposed to 52% of females.

C1. The materials of the walls of the houses were traditional grass, Bricks and Mud.

C2. The sanitation method used in the community is mainly: Pit latrine

C3. The refuse removal method used is mainly burning of the rubbish.

C4. The source of power mainly used is.
Candles
Coal/Wood
Gas and solar for lighting.
C5. Water is mainly sourced from the River, Dam, or even the Lake

D4. The development initiatives that are taking place in the community Is the rehabilitation of Lake Fundudzi.

D5. The community structures that informed the community/contractors about the development of Lake Fundudzi is the Traditional leadership through community meetings.
D6. The cultural, spiritual and the myths about Lake Fundudzi are that; the Lake is mainly used for praying the gods; they use '*thevhula and snuff*' which they pour in the lake during the praising of the gods or the thanks giving.

D7. There are economic benefits are derived from Lake Fundudzi

D8. The economic benefits derived from Lake Fundudzi are: fish and grass for thatching and making hats and traditional mats that are then sold to get an income.
D9. Other benefits e.g. Agricultural, Social, environmental that are derived from the Lake Fundudzi are: they get wild fruits like berries; '*thombe and mavhungo'.*

D10. On the opinion about the responsibility for maintaining the above projects when they are completed they said that; local government and community structures should be involved.

D11. Because, government is the one which has the knowledge about issues concerning the environment and it should support development through funding of such development.

E1. On the opinions about the importance of conserving Lake Fundudzi they agreed that the conservation of the lake is important for praying their gods, because if they do not conserve the lake, they believed that the community will have bad luck and this will affect the next generation if the lake get lost.

F1. The role and status of women in this community was perceived to be that; women were directly involved in the rehabilitation of the lake by being employed and even doing the perceived hard work of collecting stones, which are filled in the gabion wires, which serves as sedimentation traps especially during heavy rainfalls. They also do earth plugs for slowing water movements into the lake.

G1. Other comments about the development were that; they commented on the employment of poor members of the community and appreciation of the income for supporting their families. They would also encourage plantation of large trees that could also trap sedimentation into the lake. The community believes that it is important to conserve Lake Fundudzi because many activities like employment and environmental benefits could be of importance to the future generation.

CHAPTER 5
ANALYSIS AND INTERPRETATION

Changing perceptions of the environment, shifting societal goals, and the emergence of the concept of sustainability imply that today's 'environmental problem' is a hydra of multiple dimensions and perspectives. There are few simple problems and even fewer simple solutions. Natural resource management in the age of sustainability is not characterised so much by problems that have ready answers. Rather, issues that need to be resolved will inevitably require one or more of the parties to change their views (Bawden et al., 1984). This requires an approach that can deal with 'soft systems,' 'in which objectives are hard to define, decision making is uncertain, measures of performance are at best qualitative and human behaviour is irrational' (Checkland, 1981).

Khan (1999) says, "For centuries the quest for the formula of a just society and a just state has preoccupied philosophers, theologians, and political thinkers." The modern breeds of political scientists have long given up the search for justice and now merely occupy themselves with running regression models about mundane issues.

Nevertheless, justice or no justice, in all eras, the dominant concern of all thinkers has been the search for institutions, blueprints, or ideologies that would facilitate good governance. In pre-modern times, political thinkers were not as concerned with the nature of the state as they were with the character of the ruler and that of the citizens. Political cultures of nearly all societies were deeply influenced by religious mores and the definition of good society, good ruler, and even the idea of "Good" itself was a religious derivative. God and Good were synonymous.

Thus, a good governor would inevitably need a legitimate association with God and hence the emergence and widespread propagation of the myth that rulers ruled with a divine mandate. Whether it was the African tribal chief, or the Egyptian pharaoh, or the Japanese emperor, or the Chinese emperor, the Indian Raja or the European King, The Islamic Khalifa or the Persian or Greek Ruler, all derived their legitimacy as well as agency from God explicitly. They were either supposedly ordained by

God as sovereign rulers over their peoples or ruled on behalf of God. In some cultures, the difference between God and King often became unclear and the masses were encouraged to confuse the two. The Egyptian Pharaohs were the only rulers who claimed their Godhood. Even Indian kings and Chinese emperors began to believe in their own divinity.

A direct translation of the 'learning organisation' concept to the field of environmental management implies that good and effective environmental policymaking requires at its basis a 'learning society'. This in turn involves a new view of governance, one in which the government is only one part of a national governance system, and where the key feature is self-governance through interdependent individuals, groups, organisations, and institutions that operate at different levels of collectivity. A core of shared values is necessary for trust and reliable interdependence, for effective autonomy and collective action, for learning, resilience and adaptability at all levels. This capacity for governance is seen to be at the heart of sustainable human development and a prerequisite for effective responses not only to environmental, but also economic and social concerns.

This new view of governance embraces the notion and significance of *social capital*, and brings an understanding of how this is created. It recognises the need for mutual redefinition of roles and responsibilities, of behavioural expectations, values, vision, and goals. It also acknowledges that sustainable environmental and economic development implies societal development. This implies a deepening of the organisational structures of society, both state and civic, changing the processes by which their elements relate and interact.[12]

Rural poverty is a reality in South Africa, although the country ranks as the 26th wealthiest in the world, with an average per capita GDP of US$ 1,250 per year. South Africa has 40% of all the telephones installed in Africa, and consumes over 50% of all the electricity generated in the continent, ranking it the 16th in the world in

12 The Mvula Trust study claims that South Africa left its shameful past behind, and became a democracy, in 1994. The legacy of our past includes over half of our rural population of 20 million people (who make up 50% of the total population) not having adequate access (25 litres/person/day within 200m) to water, and a higher proportion not having decent sanitation. It is estimated (another legacy of the past is poor statistics) that the level of unemployment in rural areas is over 60%.

terms of energy consumption. Over 50% of all homes in the country have been electrified. The annual central government budget for rural water supply and sanitation infrastructure development exceeds US$ 100m.

Environmental Management is a community responsibility. It includes a wide-ranging set of people and institutions that deal with overall environ-mental issues and specific aspects of environmental management such as water resources and the conservation of forests. One characteristic of this set of stakeholders is when it becomes disparate and fragmented, for example, foresters who do not communicate well with water managers. Even within a sector such as water, many individuals and institutions (within and out of government) often have little contact with each other. It is evident of the well-known phenomena of the division of labour and the growth of specialization, which is itself an adaptation to the complexity of the contemporary world.

Individual poverty is characterized by very low levels of formal employment, particularly in rural areas and poor urban fringes. Access to basic services is very difficult and is often comparatively very expensive. Disease and poor health are constant realities. Even minimal costs for basic services represent a large proportion of disposable income. Education, if available, is of a very low standard and literacy levels are very low. All of these factors contribute towards the "poverty cycle" where each element is both a cause and an effect.

A sustainable society implicitly connotes a society that is based on a long-term vision in that it must foresee the consequences of its diverse activities to ensure that they do not break the cycles of renewal. It has to be a society of conservation and generational concern. It must avoid the adoption of mutually irreconcilable objectives. Equally, it must be a society of social justice because great disparities of wealth or privilege will breed destructive disharmony.

Community based natural resource management (CBNRM) is broad concept that encompasses a wide-array of resource management programs that share a recognition of the importance of the participation of people who live near and are interconnected with threatened natural resources. Similar in focus to the terms

Community Based Conservation (CBC) and *Integrated Conservation and Development Project* (ICDP), CBNRM grew out of the failure and disillusionment of older protectionist styles of management (Child, 1996a; Lewis and Carter, 1993).

Colonial-era management practices based on "fines and fences" frequently failed to achieve conservation goals because they alienated people from their traditional resource base, thereby reducing the economic and social value of natural resources, and causing over-exploitation and mismanagement (Child, 1996b). Conservation practices were also limited because they only afforded protection in legally protected areas, thereby missing the majority of wildlife and habitat that lay outside of national parks and reserves (Gibson & Marks, 1995). CBNRM and its variants attempt to restore the focus of natural resource management to rural communities, whose lives are the most immediately linked to the well-being of resources and whose cooperation is required to achieve conservation objectives (Brandon & Wells, 1992; World Resources Institute, 1992).

CBNRM works best when there is a high potential to earn revenue from natural resources through enterprises such as tourism (Alpert, 1996). Hence, a prerequisite to successful CBNRM is ensuring that the full economic value has been restored to resources. Artificial government price controls on marketed resources, or subsidies for competing land uses (e.g., agriculture) and commodities (e.g., cattle) reduce the value of resources and hamper the success of CBNRM (Child, 1996b).

However, it is not enough just to bestow a natural resource with economic value. Proprietorship plays an important role and marketing should be open and competitive (Child, 1996a). Some sort of external control is also needed, because leaving policy and conservation incentives exclusively to a free market economy favours powerful corporations that will likely overexploit the resource. Lohmann (1991) thinks that if the benefits of the resource accrue to irresponsible stewards, such as corporations with few long-term interests, there will be little opportunity for either conservation or community development.

Rural communities rarely have the resources and skills to manage natural resources completely on their own. Even though rural communities may at one time have had

effective systems for sustainable use, the social, economic, and technological foundations of those systems are often eroded or completely gone, and present-day communities are often less concerned and equipped to conserve their resource base. The modern variants of traditional practices often do not meet the needs of growing populations and increasing aspirations (Redford & Stearman, 1993). A system of co-management with government and NGOs is more likely to prove effective (Bodmer, 1994).

The roles of communities and government agencies in a co-management partnership need to be modified from their colonial legacy, which was often characterized by opposition and mutual distrust. The need to build trust and confidence between parties historically in conflict is an issue that needs to be specifically recognized and addressed by programs (Marks, 1991). Government needs to play a supportive and regulatory role as opposed to issuing decrees and policing (Child, 1996a) as regards community-Based Organizations. Unlike some other forms of rural development, the success of CBNRM is contingent on cooperation from all members of a community, and not just a targeted group within the community (Mano Consultancy Services, 1998). Thus, to avoid the tragedy of the commons, whereby members of a community exploit communal resources as quickly as possible so others in the community do not exploit them first, the diverse members of the “community” must be cohesive enough to function as a single management unit (Hardin, 1968).

Community based organizations (CBOs) are therefore integral to CBNRM for integrating community and developing management capacities. CBOs are more likely to exist and be successful when scarcity or pressure on resources is apparent and livelihoods are threatened (Brandon, 1998). Institutional structures must be cohesive enough and legally recognized to be granted ownership and management responsibilities (Child, 1996b).

The organizational units of the community must be small enough to meet face to face regularly. In other words, community involvement would apply to not more than approximately 200 households within 10 km radius (Child, 1996a). CBOs should be given all functions they are capable of performing, but new roles and functions

should not be added until a CBOs has the interest and capacity to adopt them (Child, 1996a). It takes time to develop the capacity of CBOs and build the interest of local people to try new social structures and economic strategies. A CBNRM program that is truly community-based will also be community-paced (National Parks and Wildlife Services, 1998).

Problems, including misappropriation of funds, should be expected as part of the necessary learning process for both the project staff and community leaders. They should be incorporated into the project timetable (Child, 1996a). For this reason, it is hard to introduce CBNRM in a crisis where immediate action is required. Unfortunately, donor time frames often do not concur with a realistic pace of progress, which has prompted calls to lengthen the 'incubation period' of CBNRM projects (Byers, 1998)."When a lake dies, a desert is born" is a local community organisation's slogan for saving Lake Chapala. The slogan first appeared in the 1950s, when the lake reached dangerously low levels (Burton, 2002).

The idea of stakeholder participation is a key operational principle of contemporary sustainable-development policies, programmes, and projects. However, gaining the involvement of different groups in participatory initiatives is a complex process. It is most useful to think of three levels of participation: national, institutional and programme, and projects on the ground. Because environmental programmes are designed to be responsive to changing community needs, one of the most pressing challenges is to develop participatory and systems-based monitoring and evaluative processes that allow for ongoing learning, correction, and adjustment by all parties concerned.

Nevertheless, Lake Fundudzi is not only the story of this humble relative of concern. It is also the story of local people and their efforts to survive socially and economically. An important piece of the historical background of the Vha-Venda is the context of struggle on the part of local communities to gain control of their resources. It has been a long process of building a relationship of trust between the stakeholders. There have been some difficulties. One of the original challenges was due to the legal framework underpinning the Wetland rehabilitation.

We have highlighted the importance of participation by a multiplicity of stakeholders in common pool management decisions. Around Lake Fundudzi, local stakeholders are far from being trapped in a dilemma of resource depletion as the conventional "tragedy of the commons" scenario suggests. Instead, they are acting creatively and collaboratively to address the challenges of shared resource management, and have achieved notable success. Ultimately, natural resource management projects seek to attain a level of sustainability in both resource conservation and social development.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Rural practices along Lake Fundudzi in the underdeveloped rural region of the Limpopo Province are subject to severe environmental degradation. Rural communities with low-income levels are highly dependent on available natural resources, including aquatic resources, for survival.

Limited environmental awareness and a lack of infrastructure and development planning for sustainable utilisation worsen the situation. Reticulation in infrastructure leads to many people using water directly from the lake for household purposes. In addition, the washing of laundry in the lake is a common health-wise hazardous activity as there are no other water sources available. There is also no refuse removal system or functioning recycling process. Most people resort to burning their rubbish.

The management of Lake Fundudzi will have to be viable and sustainable for rural economies. The conservation and enhancement of the natural resource base will need to involve the minimization of environmental impact, improved quality of community level managerial skills

The effects of negative change to natural resource management systems are often complex. It takes long and it is hard to identify substantive causes. Whilst community and institutional attitudes and understanding of natural resource management are evolving, there remains considerable ignorance. There is lack of access to information and inadequate understanding on the long-term effects of wetland damage on the environment.

There is a great need for government to play a supportive role. This can only be done if the different agencies work together, including non-governmental agencies and different community structures. The interrelationship can work where there is trust. There are recognised principles on maintaining ecological integrity and biolo-

gical diversity to help meet the basic needs of humans by eliminating economic injustice. All this would be done for the benefit of future generations.

Community Based Natural Resource Management needs to be encouraged for local communities to diversify their income sources. When people manage their own resources, the benefits will accrue to them and their immediate environment. They will effectively begin to engage in wetland rehabilitation. The Lake Fundudzi experience has highlighted the use of learning. It has generated valuable insights into the complexity of participatory approaches possible in a peculiar rural wetland setting.

6.2 RECOMMENDATIONS

Water is a key, fundamental, and indispensable natural resource. It is essential for human life and the quality of human life, the environment, food production, hygiene, industry, and power generation. Water is a limiting factor when it comes to economic growth and social development. In South Africa, especially, where it is a relatively scarce resource that is distributed unevenly both geographically and temporally as well as socio-politically. Prosperity for South Africa depends upon sound management and utilisation of our many natural and other resources with water.

The investments in the Rehabilitation of the Wetlands of Lake Fundudzi need to be effective and sustainable. Environmental degradation is only a symptom of the lack of planning, unsustainable use of resources, lack of coordination between local authorities, and the pressing needs of the communities in the past. In order to achieve long-term sustainability a systemic-holistic approach to development is required.

The rehabilitation of the wetlands needs to incorporate the creation of sustainable livelihoods for the communities. This should include development of infrastructure that will satisfy the need for water, energy, shelter, sanitation, and irrigation services to the human settlements in the catchment.

The creation of this infrastructure will entail using ecological principles to reduce the weight and pressure of the human activity in the environment. Simultaneously, it

would decrease the need of communities to live off the lake resources. Food security programs should integrate sustainable agriculture practices vis-à-vis the ecosystem of the lake. This will increase the quality of life of the population and the human capital.

There should be identification of areas for the practice of sustainable agriculture that could be worked in a communal base as a source of income for the families in the area. Identification of main economic activities that can be regulated according to environmental requirements. Examples include fishing, tourism and crafts. The whole process will need to be delivered through an educational awareness program in order to affect the attitudes of the community. The capacity to use the traditional systems of knowledge, the legitimacy of traditional authorities, and the identification of the people within the lake should constitute a key element in this process.

Another relevant aspect will be the capacity to draw an integrated plan of development common to different government departments, community, and traditional authorities. This plan will be able to facilitate the coordination of efforts in order to avoid, replication, contradiction and lack of results. The Rehabilitation of the Wetland will be one of the key aspects of this plan. To address the long-term sustainability initiative, socio-economic programmes will need to be taken into consideration.

6.2.1 Stakeholders in Lake Fundudzi

*Within the Household*s: The role of women members in particular in the making of decisions and provision of labour during the rehabilitation of the Lake should be enhanced.

Community structures and traditional leadership should represent the community and keep households informed of all aspects of the project, enforcing payments, facilitating decision making, managing implementation.

The *Local Government* should be the legal owner of infrastructure and responsible for ensuring that services are provided and managed. It should be responsible for planning, implementation strategies, and prioritization.

Consultants should project manage and support the rehabilitation through technical design and supervision, training as well as through facilitation.

Few frameworks have been developed for participatory natural resource monitoring for conservation programs.

6.2.2 The Project Cycle Model

Perhaps the most well developed framework for conservation monitoring is the "Project Cycle model developed by the Biodiversity Support Program," (Margoluis and Salafsky, 1998b). This framework (Figure 1) emphasizes the role of monitoring in a larger context of project planning and evaluation. It also stresses the iterative nature of monitoring and project design role as opposed to issuing decrees and policing (Child, 1996a).

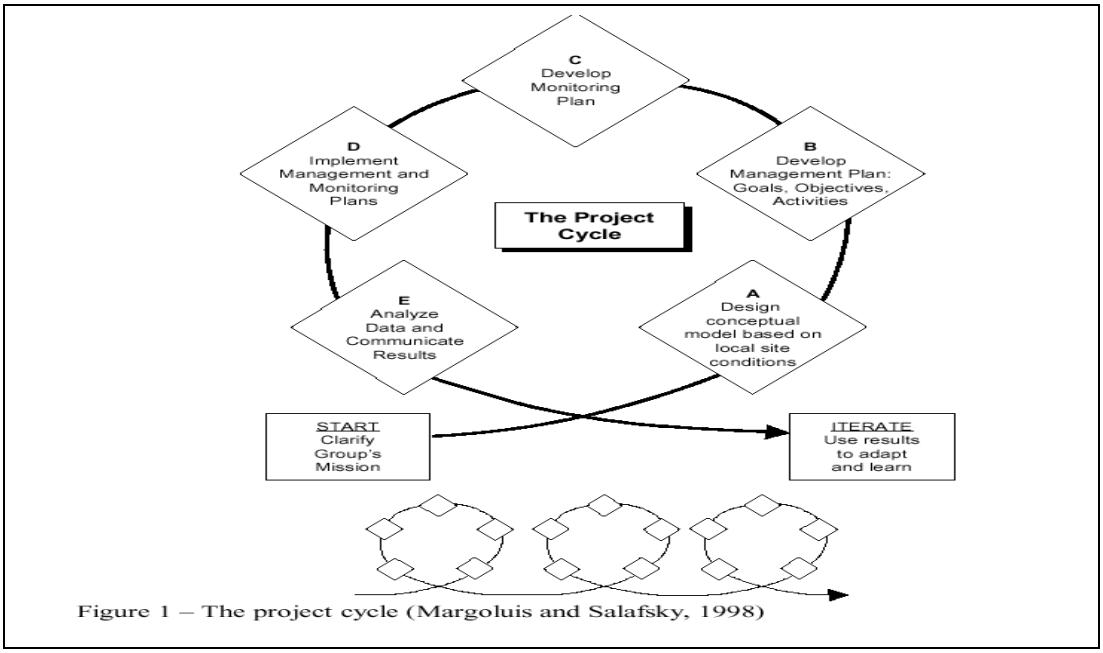


Figure 1 – The project cycle (Margoluis and Salafsky, 1998)

What is most worrying from poverty eradication and sustainable development perspective is that there continues to be a conspicuous absence of an over-arching poverty reduction strategy. In particular, we need a poverty reduction strategy that marries content with a practicable implementation plan. It can be argued that the RDP had content but lacked form. The IRDP and URS have form but lacked content. Within this environment, it is not surprising that many ground-level anti-poverty interventions do not rate highly in terms of sustainable development.

Protection of the hydrological functioning of wetlands is limited. Developing guidelines for drainage practices in land adjacent to wetlands, and reducing nutrient loading of surface and groundwater's flowing into wetlands would help achieve this.

There is a need for more research to improve understanding of wetland development and function. There is need for effective control methods against threats from weed invasion. There is need to design and monitor effective restoration efforts. Some of this research could be achieved thorough ongoing communication with funders and research organisations and by incorporating principles of wetland protection into regional and district and local plans.

Finally, there is an urgent need to rehabilitate the wetlands. The community has the potential to contribute to this process because of the sense of identity with the lake and the awareness of the fast environmental degradation. Any plan to rehabilitate the environment will need to address the need to create an alternative livelihood that can improve the living conditions of the community. An integrated development plan and the coordination of different authorities are necessary.

APPENDIX I

Box 1: The Betterment Schemes in the Former Homelands

The so-called Betterment policy was proclaimed in 1939, and applied to all homeland areas. It was motivated in large part by fears of the white government that environmental collapse in the homelands would have negative repercussions for the rest of the country outside of the homelands. The primary tool of Betterment was rigorous land use planning and the forcible imposition of those plans. People living in sparse settlements were compelled to re-settle in villages, and arable and grazing areas were designated, in the belief that this would result in a more productive and sustainable use of natural resources.

The results of Betterment, which did not pick up pace until the 1950s, were contrary to the government's expectations. The forcible re-location of households and communities damaged existing systems of livestock control, and concentrated the impact of livestock around new settlements where previously the impact was diffuse. Whereas homesteads were previously located on or near choice arable land, their re-location often put them at a distance from the best fields, leading to land under-utilisation.

Although an extreme example, Betterment illustrates in a negative form a number of important interdependencies between poverty and the environment. First, the principle of environmental governance was violated extravagantly, in that the entire system was imposed from outside. The authority of traditional leaders was undermined, while indigenous knowledge was disregarded.

Therefore, even apart from the dictatorial manner in which the schemes were implemented˜ which led to resistance in and of themselves˜ the schemes were injudicious because they did not take into account the logic of the existing land use systems, nor the overall livelihood strategies upon which people depended. Second, the new land use system under Betterment exacerbated households'

vulnerability to negative shocks such as drought. The inappropriate re-designation of land use, together with the attempt to impose controls on stock numbers and movements, resulted in less flexibility in the face of weather fluctuations, thus forcing households to adopt strategies of risk-coping that were either less environmentally sustainable or more personally costly (e.g. more planting of marginal areas). Lastly, of course, the entire homeland system is a prime example of the relationship between environmental injustice and poverty. In the event, both the injustice and the poverty were only worsened by Betterment planning.

A fuller appreciation of the different ways in which poverty and environment are related provides a more complete picture of the damaging reinforcement between poverty and environmental stress in the past, as well as a vantage from which to understand the post-apartheid government's efforts to come to grips with poverty eradication through sustainable development.

APPENDIX II

Box 2: The Working for Water Programme and the LandCare Programme

Working for Water Programme

The Department of Water Affairs and Forestry (DWAF) launched the Working for Water Programme in 1995. The purpose of the programme is to eradicate alien plant species that depletion available surface and groundwater, impair biodiversity, and contribute to the danger of run-away fires. Roughly 8% of the country has been infested with alien plant species, most of which are trees that are not coincidentally also used in commercial forestry. Unchecked, the area covered by alien vegetation has the capacity to double every 20 years.

The Working for Water Programme spent about R824 million between 1995/1996 and 1999/2000, of which the vast majority has gone to wages for labour-intensive clearing. The annual budget now rests at around R450 million currently. In 1999/2000, about 112 000 hectares had been cleared, together with another 121 000 hectares that were cleared as a follow-up to earlier clearings.

The Working for Water Programme is one of the government's most visible and esteemed initiatives, and with good reason. It consistently succeeds in spending a high percentage of its budget allocation; it secures contributions from the private sector and foreign donors, and captures an ever-increasing allocation from the Poverty Alleviation Fund. In addition, it has received numerous awards.

LandCare Programme

The National Department of Agriculture (NDA) initiated the LandCare Programme in 1998. Inspired by a similar programme in Australia, the overall goal of the LandCare programme is "...to optimise productivity and sustainability of resources so as to result in greater productivity, food security, job creation and a better quality of life for all" (NDA, 1999). Because of the salient job creation element within the objective, the LandCare Programme was allocated R25 million following the Presidential Job Summit of 1998.

The LandCare Programme comprises five main elements: 1) major resource conservation works; 2) community and staff capacity building; 3) awareness; 4) policy and legislation; and 5) research and monitoring. The bulk of direct interaction with low-income households occurs through the first two elements, which are therefore our focus here. In terms of budget, also, these first two elements account for 60% and 20%, respectively, of the overall budget for the programme.

The overall responsibility for the LandCare Programme rests with the NDA, while the provincial agriculture departments serve as the "provincial land-care coordinators". As provincial coordinators, the provincial agriculture departments are responsible, *inter alia*, for the management of conservation works and community capacity building, either directly or through service providers such as private sector consultants and NGOs.

Provincial agriculture departments are also responsible for the creation of 'local land care committees', usually established at the regional or district level, which bring together various stakeholders including staff of provincial agriculture departments, commercial farmers, small-scale farmers, and community leaders.

As of 1999, there were 23 "focused investment" conservation projects across the country, and 33 community grant-based projects. As of 2000, the Programme claimed to have rehabilitated 48 000 hectares, which while perhaps a very good start, represents a mere 0.8% of the total degraded area of the country, and says nothing of the ability of the Programme to stem the degradation of areas of the country not yet classified as degraded.

The four provinces of Mpumalanga, Limpopo, Eastern Cape, and KwaZulu-Natal, capture 80% of the overall LandCare budget. There appears to be a fair amount of provincial variation in terms of how the resources are used. For example, in Limpopo a large share of the budget was devoted to transforming and rehabilitating the old irrigation schemes – in conjunction with the Community-Based Public Works Programme – that were run by the state or by the Agricultural

and Rural Development Corporation. While on the one hand one should be encouraged by the fact that the Programme is flexible enough to address local priorities, it also suggests that the LandCare Programme has the potential to be viewed as a pot of money which can be used by under-funded provincial departments for purposes that, however worthy, are not closely related to its stated objectives.

In a given province or district, the LandCare and Working for Water Programmes may complement one another or may even lead to conflict. The programmes may prove complementary in the sense that once a provincial department has assumed responsibility for the one, it is not a great deal of additional work to assume responsibility for the other.

The biggest source of conflict appears to be when members of a community benefiting from the LandCare Programme become aware that members of an adjacent community are earning a significantly higher wage from the Working for Water Programme or vice versa, leading to disgruntlement and de-motivation. In General, coordination among the various public works and infrastructure investment programmes tends to be poor. Despite their undeniable successes, the Working for Water Programme and LandCare Programme raise a number of important issues about the ability and commitment of the government to pursue a path of sustainable development.

APPENDIX III

According to Lake Fundudzi Wetland Rehabilitation Plan the following information are the General locality information and the catchment information.

Table 1: General locality information

Province:	Limpopo		
Municipality/ Local Authority	Thulamela Local Municipality		
Town (closest town):	Thohoyandou		
Co-ordinates of project	Degrees °	Minutes ‘	Seconds ¨
Longitude:	22	51	35.6
Latitude:	30	17	33.0

Table 2: Catchment Information

Approximate area for entire wetland and lake: (ha)	Wetlands (15): 95.349 ha Lake Fundudzi: 126.979 ha
River system name:	Mutale River – A tributary to the Luvuvhu River that flows into the Limpopo River System.
Sizes of sub-catchments and entire catchment for Lake Fundudzi: (ha)	Mutale sub-catchment: 2480 ha Godoni sub-catchment: 2270 ha Muiladi sub-catchment: 1270 ha Total catchment area: 6020 ha (van der Waal 1997)
Land Use in catchment: (Describe land uses, in, adjacent to and upstream of wetlands. Highlight land use issues in the greater catchment area if these have an impact on the wetlands)	In wetland areas (ranked according to impact): Afforestation. Exotic invader vegetation. Gravel and two-spoor roads. Rural agriculture activities. Grazing & trampling. Pollution (washing of cars, clothes, etc, lack of waste water treatment). Water abstraction. Dumping. Storm water drainage (roads).

	Rural settlement. Adjacent to wetland areas (rank according to impact): Afforestation. Rural agriculture activities. Grazing and trampling. Rural settlement. Roads Dumping. Storm water drainage (households & roads). Upstream of wetland areas: Same as above. Burrowing pits (soil).

LANDOWNERS

Land ownership: (list all landowners on whose land the wetland occurs)	Thulamela Local Municipality, Vhembe District Municipality & Komati Forests

APPENDIX IV : QUESTIONNAIRE

Questionnaire

COMMUNITY PARTICIPATION CONCERN FOR THE SUSTAINABLE DEVELOPMENT OF LAKE FUNDUDZI REHABILITAION PROJECT

GREETINGS!!

MY NAME IS……

I am Masters Student of the University of the Witwatersrand and I am conducting the interview on the Community Participation of Lake Fundudzi Project; the research is part of the Masters Thesis.

Please note that the information you give is confidential and will not be passed on to anyone else.

QUESTIONNAIRE ON COMMUNITY PARTICIPATION ON THE SUSTAINABLE DEVELOPMENT OF LAKE FUNDUDZI REHABILITATION PROJECT

Section A: Household/Organisational Identification

A1. Date (dd/mm/yyyy):____/____/_____

A2. Name:……

A3. Household/Organisational name:……

A4. Name of the Village:……

A5. Name of the respondent:……...

A6. Address of the Household:……...

A7. Date checked (dd/mm/yyyy):____/_____/_____

A8. Signature:_____

Please ask all interviewees to draw their surrounding area/landmarks

B: Community/Organisational Profile Questionnaire

Interviewer: Record details for B1-B4

B1. Name of the District:

B2. Local Municipality

B3.Area and Type of dwelling:

Rural: Farm homestead/kraal/hut
Rural: housing on a commercial farm
Urban: formal
Urban: Informal
Other:

B4. Sex of Respondent:

Male

Female

I would like to ask you some general questions about yourself and your community.

LET'S NOW TALK ABOUT THE PROVISION AND QUALITY OF SERVICES IN YOUR COMMUNITY

C1. What are the walls of your (surrounding) houses made of?

DO NOT READ OUT

Traditional grass Corrugated iron Bricks Wood Mud

C2. Which of the following sanitation does your (Community structure use):

VIP

Pit latrine

Bucket toilet

Flush toilet

Bush

Other

C3 How do you deal with refuse removal

Rubbish bin in the yard

Communal rubbish dump

Burn rubbish

Dump rubbish in veld

Other

C4. What source of power do you mainly use?

Candles

Coal/Wood

Electricity

Gas

Paraffin/primus stove

Power from generator or battery

Other

Nothing

C5. Where do you mainly get water?

Tap in the yard

Communal tap/standpipe

Spring

River/Dam/Lake

Water truck

No regular source

NOW LET'S TALK ABOUT LAKE FUNDUDZI DEVELOPMENT IN YOUR COMMUNITY

D4. Are you aware of any development initiatives that are taking place in your community?

Yes (NAME THEM) No Don't know

If the answer is yes then proceed to D5

D5. Which community structures informed you about the development of Lake Fundudzi?

Traditional leader
Consultants/Contractors
Project Manager
Local govt official
Other govt official
Political party
Community meeting
Other (Specify)

D6 In your opinion what are the cultural, spiritual and the myths about Lake Fundudzi?

_____
_____
_____
_____
___

D7. Do you derive any economic benefits about Lake Fundudzi Yes/No? *If yes, proceed to D.8*

D8. What are the economic benefits that you derive from Lake Fundudzi?

_____
_____
_____
_____
___

D9. Are there any other benefits e.g. Agricultural, Social, environmental that are derived from the Lake? Yes/No

If yes, what are they?
_____
_____
_____
_____
___

D10. In your opinion who should be responsible for maintaining the above projects when they are completed?

Provincial govt.
District Council
Local govt
Traditional leader
Community structures
Other (Specified)

D11. What makes you say that? [Record verbatim]
_____
_____
_____
_____
___

E1. In your opinion is it important to conserve Lake Fundudzi? Yes or No Explain in detail your answer and RECORD VERBATIM

_____
_____
_____
_____
_____
_____
_____
_____
_____

F1. Is there anything you would like to say about the role and status of women in this community?

_____
_____
_____
_____
___

G1. Is there anything else about the development that you would like to add?

_____
_____
_____
_____
___

END OF INTERVIEW THANKS RESPONDENT!!!

REFERENCES

Abrams, L., (1999), “Poverty and water supply and sanitation services,” Regional Workshop on Financing Community Water Supply and Sanitation.

African Development Report, (2005), “Africa in the World economy Public Sector Management in Africa economic and Social Statistic on Africa”, African Development Bank, Oxford University press.

Akyuz , G., Gore C., (2001), “African Economic Development In comparative perspective”, Cambridge Journal, (25), pp265-288.

Aliber, M., (2001), "A Study of the Incidence and Nature of Chronic Poverty and Development Policy in South Africa: An Overview", PLAAS and University of Manchester.

ANC, (1994), "The Reconstruction and Development Programme: A Policy Framework".

Baumann, T., (2001), "Microfinance and Poverty Alleviation in South Africa", unpublished manuscript.

Bond, P., (2000), “Elite Transition: From Apartheid to Neoliberalism in South Africa”, Pietermaritzburg: University of Natal Press; pp.98-99.

Butler, M., Hallows, D., (1998), "Poverty and the Environment in South Africa", SANGOCO Occasional Publications Series, No. 4.

CASE, (2000), "Evaluation of the Capacity of Programme Implementing Agents to Implement the Community-Based Works Programme".

Collier P., Gung j., (1999), “Exploring Africa’s Economic Perspective”, Journal of Economic Literature (3), pp 64-11

Cross. C., Luckin. L., Mzimela, and Clark C., (1996), "On the Edge: Poverty, Livelihoods and Natural Resources in Rural Kwazulu-Natal", in M. Lipton, F. Ellis, and M. Lipton, eds., *Land, Labour and Livelihoods in Rural South Africa*, Durban: Indicator Press.

Department of Finance, (1996), “Growth, Employment and Redistribution – A Macro-Economic Strategy”, Pretoria: Government Printers.

Department of Finance, (2000), Memorandum to government departments on the Special Allocation for Poverty Relief, Infrastructure Investment and Job Summit Projects.

Department of Water Affairs and Forestry, Working for Water, (2002), “WETLANDS, Water Life and Culture: Mondi Wetlands.

Frankel, J., Rose A,. “Is Trade Good or Bad for the Environment? Sorting out the causality,” Working Paper 9201

Gallagher, Kevin P., and Jacob Werksman, Eds., (2002). “International Trade and Sustainable Development”. London: Earthscan.

Grimble, R., (1998). Socio-Economic Methodologies Best Practice Guidelines. University of Greenwich, DFID.

Hirji, R & Molapo, J., (2002). Environmental sustainability in water resources management. In R. Hirji, P Johnson, P Maro and T.M Chiuta (Eds) defining and mainstreaming environmental sustainability in water resources management in Southern Africa. Sida: Maseru. 1-20

International Food Policy Research Institute, (2000), “Women-The Key to Food Security: Looking Within the Household.” Policy Brief, Washington D.C.

IUCN, (2003), “The Wealth of Wetlands”, (http://www.iucn.org/themes/wetlands/pdf/The%20Wealth%20of%20Wetlands.pdf)

Jayne, S., Yamano, T., Weber, M., Tschirley, D., Benfica, R., Neven, D, Chapoto A, and Zulu D., (2001), “Smallholder Income and Land Distribution in Africa: Implications for Poverty Reduction Strategies, MSU International Development Paper No. 24. Department of Agricultural Economics, Department of Economics, Michigan State University.

Khan, M, (1999), "Good Governance, Government, Democracy, Islamic state, Good governance: requires good men or good laws?" South Asia

Khorommbi, K. (2001)' “The Role of Venda Culture in Nature Conservation”

Khorommbi, M,. (2000), Towards a Sustainable Land-use Plan for Lake Fundudzi Catchment Area, Dissertation, University of Pretoria.

Lazarev, G., (1994), “People, Power and Ecology, Towards participatory eco-development”, London, MACMILLAN.

Mandela, N., (2005), “Africa’s time has come: The role of the United States in aid and development efforts”, A Brookings Briefing, Washington D.C. Massachusetts Institute of Technology (murcott@mit.edu).

Maya, P., Segura, O., Bonilla b., (1996), “The environmental effects of agricultural trade liberalization in Latin America: an interpretation”, Universidad Nacional de Costa Rica, Herdia, Costa Rica.

Miller, G., (1996), “Living in the Environment” Washington, Wadsworth Publishing Company.

Mkandawire, T., (2001), “Thinking about a Development State in Africa”, Cambridge Journal of Economics (25), pp 289-313.

Mouton, J., (1996), “*Understanding social research”.* Pretoria: J.L. van Schaik.

Mouton, J., (2001), “*How to succeed in your Master’s & Doctoral Studies”.* Pretoria: J.L. van Schaik.

Murcott, S., (1997), “AAAS Annual Conference, IIASA "Sustainability Indicators Symposium," Seattle, WA 2/16/97

Noble, R. G., Hemens. J, (1978). “Inland Water Ecosystems in South Africa - a review of research needs”. South African National Scientific Programmes Report 34. CSIR, Pretoria, 121pp.

Paehlke, Robert C., (2003). “Democracy’s Dilemma: Environment, Social Equity, and the Global Economy”, The MIT Press: Cambridge, MA.

Ramachandra, T.V., (2001), “Restoration And Management Strategies Of Wetlands In Developing Countries”, Electronic Green Journal (15), (http://egj.lib.uidaho.edu/egj15/ramacha1.html)

Sachs J., et al (2004), “Ending Africa’s poverty trap”, Journal of Economic Literature, pp 64-111

Schwoerbel, J., (1987), “Handbook of Limnology. Water and Wastewater Technology”, Ellis Horwood: Chichester.

Shine, C. and de Klemm, C., (1999), “Wetlands, Water and the Law: Using law to advance wetland conservation and wise use”, *IUCN: Cambridge*

South Africa, (1998), “National Water Act: Act 36 of 1998”, Government Printer: Pretoria.

The Wetlands Regulation Centre. Http//www.wetlands.com/reg/

United Nations Development Programme, (2005), “Assessing Environment’s Contribution to Poverty Reduction”, Printech, One United Nations Plaza, New York.

United Nations Development Programme, (2005), “Assessing Environment’s Contribution to Poverty Reduction”, Printech, One United Nations Plaza, New York.

Van der Waal, B C W 1997. Fundudzi, a unique, sacred and unknown South African lake. *Sth. Afr. J. aquat. Sci.* 23(1): 42-55.

Wadsworth, Y. (1998). “What is participatory action research?”, (http://www.scu.edu.au/schools/gcm/ar/ari/p-ywadsworth98.html)

Wood, A., Maye J., (2001), Africa’s experience structural in a comparative perspective (25), pp 369-394.