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Expanding Biodiversity Conservation beyond the Official Mandate of the Dwesa-Cwebe Nature Reserve of South Africa: Qualitative Assessment Based on Nqabara Administrative Area

by

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Department of Agricultural Economics, Extension and Rural Development
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DECLARATION

I, Kamal Adekunle Abdu-Raheem, hereby declare that the work presented in this dissertation is originally my own and has never been submitted for any award in any other institution. Proper citation and referencing has been done where information from other sources has been used.

Signature……..
Kamal Adekunle, Abdu-Raheem
Date…….

Approved by:
Signature…….
Dr Eric Dada Mungatana
Date…….

DEDICATION

This research thesis is humbly dedicated to Allah, the Almighty, for endowing me with the required knowledge and every necessary provision needed for the accomplishment of this work. If not for His mercy on me, I would not have been able to achieve the slightest bit of this success.

ACKNOWLEDGEMENT

He who proves to be ungrateful to his fellow men would, undoubtedly, be ungrateful to his creator- Allah. In the light of this, I owe a great deal of gratitude to many people who have made contributions, one way or the other, to the successful completion of this piece of work.

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ABSTRACT

This paper examines the possibility of extending biodiversity conservation onto the communal lands of the Dwesa-Cwebe area in the Eastern Cape, South Africa, by investigating the natural resource based factors, the community based factors and the external institutions based factors that have contributed to the perceived success in the on-going biodiversity conservation programme in the Nqabara Administrative Area using the qualitative approach to scientific investigation. To accomplish this, this study developed a conceptual framework to unravel the complex community conservation initiative in the Nqabara Administrative Area to gain a good understanding of the factors that have enhanced its successful implementation. The field work lasted the period July, 2009 and March, 2010. The interview sample composed of thirty participants, with sex ratio of 18 males to 12 females. The number of villages under the umbrella name Nqabara Administrative Area is ten, and each village was represented by three people which made our sample's spatial allocation even. A focus group discussion was adopted as the data collection method; and the underlying factors that have contributed to the success of the conservation initiative were subsequently identified. Appropriate coding

was assigned to each distinct and major factor for proper presentation of the results, and observations were appropriately provided to buffer the explanation of the results. The main findings of the study indicate that for success: (a) there is a major need for any community that desires to participate in biodiversity conservation to possess important biodiversity species on their lands, understand the basic principles and demands of engaging in conservation, and have alternative sources of livelihood to reliance on these important biodiversity; (b) it is important to seek for assistance from reliable and relevant external institutions in the form of finance, community training, coordination, regular evaluation, and adequate representation in the decision-making processes at the government level and (c) it is important to have a common interest and goal by a community on the issue of adopting biodiversity conservative initiative, and to what extent it is to be adopted; and reliable members should be appointed as their Trust Board members who will be charged to direct the affairs of the conservation initiative on behalf of the general community and represent their best interest with the government and other concerned external institutions. Based on the foregoing, this study recommends that the Dwesa-Cwebe area should adequately consider and ensure the above-mentioned factors are in place to achieve successful community biodiversity conservation.

Keywords: Dwesa-Cwebe, Nqabara Administrative Area, biodiversity conservation, communal land

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LIST OF ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
ADM	Amathole District Municipality
AGM	Annual General Meeting
CBNRM	Community Based Natural Resources Management
CNP	Contractual National Park
CWM	Community Wildlife Management
CWS	Community Wildlife Service
D-C	Dwesa-Cwebe
DWAF	Department of Water Affairs and Forestry
DEAT	Department of Environmental Affairs and Tourism
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
HIV	Human Immunodeficiency Virus
IUCN	World Commission on Protected Areas
KWS	Kenya Wildlife Service
LED	Local Economic Development
MLM	Mbashe Local Municipality
MPA	Marine Protected Area
NAA	Nqabara Administrative Area
ND	Notarial Deeds
NGO	Non-governmental Organisation
NPAs	Natural Protected Areas
NSBA	National Spatial Biodiversity Assessment
PA	Protected Area
PFM	Participatory Forest Management
SDI	Spatial Development Initiative
TD	Title Deeds
WP	Wildlife Partnerships

CHAPTER ONE

INTRODUCTION

1.1 Protected areas as tools for conserving biodiversity

Natural areas refer to parts of the landscape that still remain in their original form in which they were created and in relatively undisturbed states. They serve as repository of biological diversity world-over. Protected areas are usually the principal instruments used to protect such natural areas. The IUCN World Commission on Protected Areas (IUCN, 1994) describes a protected area as:

> *An area of land and / or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resource; and managed through legal or other effective means.*

Natural protected areas (NPAs) play a very important role in the conservation strategies of biodiversity and sustenance of the ecological integrity of the ecosystems upon which the local communities rely to earn their livelihoods and sustenance (Ervin, 2003a; IUCN, 2005).

All protected areas follow and meet the general principles and purposes given in the above definition, but the exact purposes underlying their management greatly differ. Based on the various primary management objectives of protected areas, IUCN (1994) identifies eight different categories of protected management areas as follow:

- Category 1a: Scientific reserve/strict nature reserve;
- Category 1b: Wilderness area;
- Category 2: National park;
- Category 3: Natural monument/natural landmark;
- Category 4: Managed nature reserve/wildlife sanctuary;
- Category 5: Protected landscape/seascape;
- Category 6: Resource reserve;
- Category 7: Natural biotic area/anthropological reserve), and
- Category 8: Multiple-use management area/managed resource area.

All the categories represent different levels of protection ranging from strict protected

areas to multiple-use reserves, with varying degrees of global, regional, and local significance.

The general objective of protection in an area is to offer a basis for management and determination of derivable uses compatible with it. Sometimes, management objectives are planned to accommodate harmonious set of benefits. By establishing a number of different types of protected areas with different objectives, one can have a variety of benefits in form of recreation and tourism, watershed protection, ecological processes, biodiversity, education and research, consumptive uses, non-consumptive uses, and future values (Dixon and Sherman, 1991).

Protected areas cannot attain all these given objectives and deliver the desired benefits without proper attention being directed to the basic concerns that impact on their effectiveness. The fact that protection is required is an indication that there are some impending threats to the natural areas. NPAs experience various kinds of coercion that range from deforestation and habitat fragmentation, encroachment, pollution, invasion of alien species, wild fires, logging and hunting (Ervin 2003a; Carey *et al*. 2000). According to Mas (2005), important threats affecting protected areas can be broadly divided into four categories namely:

- Individual elements removed from the protected area without alteration to the overall structure (e.g. animal species used as bush meat, exotic plants or over-fishing of specific species).
- Overall impoverishment of the ecology of the protected area (e.g. through encroachment, long-term air pollution damage, or persistent poaching pressure).
- Major conversion and land degradation (e.g. through removal of vegetative cover, construction of roads through protected areas, mining activities, etc.).
- Isolation of protected areas (through major conversion of surrounding land).

These threats could impact greatly on the effectiveness of NPAs depending on several features; for instance, the management effectiveness (Ervin 2003b), the socioeconomic and political context (Little 1994), environmental factors (such as vegetation types and altitudinal range), conservation status, and accessibility of

resources (Pressey et al. 2002; Mas 2005), and many more. To establish a well-functioning protected area system, a lasting political and financial support that transcends just declaring new parks must be readily available (Hockings et al. 2000).

In practice, these above-mentioned commitments are mostly not satisfied. Many areas of the developing world have no budget at all for protected areas, and thousands of protected areas in some other developing countries experience highest degree of funding deficit. Insufficient funding experienced by these protected areas translates to inadequate staffing, obsolete and insufficient equipment use and, overall poor management practices. In addition, institutional commitment may also go a long way in influencing the success of protected areas (IUCN, 1993).

The advent of democracy in South Africa, for example, has brought about the issue of land reform which is meant to redress the land inequality problems that resulted from the apartheid regime. According to the South African constitution (Section 25, Act 108 of 1996) which not only provides for a right to land reform and equitable redress, but also for a dedication to environmental protection, in the interest of both the present and future generations, through reasonable legislative and other measures that among other things, contribute to conservation. This type of policy instrument pledges full support of the government and promises hopes to biodiversity conservation within the boarders of the country (James et al., 2001; Wilkie et al., 2001). .

The ecological need for biodiversity conservation success constitutes the major focus and concern currently all over the world. With the level of advancement in technological know-how as we cross the threshold into the 21st century, it was ascertained that many existing biodiversities of the world are in danger of extinction (Pimm et al., 2001). Hilton-Taylor (2000) indicated in his study that some 25% of all mammals, 12% of birds, and 20-30% of reptiles and amphibians are endangered. This may be due to the non-alignment of biodiversity conservation with the land use medley that exists in most regions of the world. To address this problem, there is a general agreement among the delegates that attended the recent 2003 World Parks Congress held in Durban- South Africa, that the global reserve system need being

expanded to cover lands outside officially designated protected areas to prevent the disappearance of plants and animals.

With particular reference to South Africa, the protected area within the country covers less than 6% of the national territory whereas the country is recognized as one of the seventeen mega diversity nations of the world. Although South Africa just covers 2% of the total world's land area, it is a home to not less than 10% of the total world's plants and 7% each of the mammals, reptiles and birds. In fact, three of the world's most categorized hotspots- the Cape Floristic Region, the Succulent Karoo and, Maputaland-Pondoland-Albany- are located within the nation's boundaries. With all these, as at present, the protected areas do not give adequate representation of the full range of the biodiversity types that demand conservation. For example, out of 441 vegetation types found in the country, 110 are not protected at all. In addition, 90 vegetation types have less than 5% of their target area for biodiversity conservation protected, and more than 300 vegetation types have less than half their biodiversity target protected within statutory protected areas (National Spatial Biodiversity Assessment [NSBA], developed by Botha, 2004). Therefore, the obvious solution to the impending problem of inadequate representation is to extend biodiversity conservation outside the boundaries of the current designated protected areas.

1.2 Problem Statement

The NSBA (2004) estimates that between 30-50% of the total communal lands in South Africa occur in priority areas for conservation, and that the government has emphasized the earnest need of expanding biodiversity conservation onto the communal lands. With this, local actors are the chief users and guardians of the nation's ecosystems, and they make the vast majority of daily environmental decisions with their land use and investment choices. Over generations, they have used their traditional knowledge to manage natural resources, conserve ecosystems, and adapt to environmental changes. Despite its basis in this knowledge and experience, the transformative potential of local actors to manage the environment to a substantial level and to achieve development goals has not been adequately

harnessed. This situation stems from a systematic failure to deliver the rights, access, moral supports and finances that local actors need to fully and sustainably utilize their natural resource assets and frame their own development solutions; and , at the same time, because communal land owners do not derive direct benefits from biodiversity conservation on their lands. Given the existence of other income generating land uses, communal land owners usually choose those land uses ahead of biodiversity conservation. If this trend continues, then, biodiversity will be threatened in the areas where it has great potential of existence. There is thus a need to ensure that communal land owners substantially and successfully conserve biodiversity but, this will not occur naturally given the existence of these identified failures. It follows that the identification of prerequisite factors and appealing packages of incentive, which can inspire and motivate communal land owners to adopt land use practices that are compatible with biodiversity conservation, becomes important. This is a research gap which has to be explored with urgency and, therefore, the focus of this research work. This study, therefore, will identify such prerequisite factors and unravel the principles to guide the crafting of such a package of incentives using the Nqabara Administrative Area (NAA) of the Eastern Cape as a case study.

1.3 Research Objective

The main objective of this paper is to identify the *sine qua non* factors which are consistent with community biodiversity conservation in the Nqabara AA, and which could be used to inform decision-making about extending biodiversity conservation onto the communal lands of the Dwesa-Cwebe and other areas of the Eastern Cape. However, the specific aims of this study include:

- Understanding the natural resource based variables that are of importance to the successful implementation of communal biodiversity conservation at the Nqabara AA;
- Realizing the variables relating to the Nqabara community organization level which have contributed to the success of the conservation initiative; and
- Being *au fait* with the roles and impacts of the partnership relationship between the Nqabara AA and the relevant external institutions in the successful implementation of the biodiversity conservation programme.

1.4 Importance and Benefits of the Study

In line with the fact that the main cause of habitat destruction is also the main cause of species extinction (Murray 1995), there is an urgent need to proffer solutions that will help protect habitats in order to reduce the pace and rates of the extinction of species. In addition, based on the fact that out of the 441 vegetation types found in South Africa, 110 are not protected at all, 90 vegetation types have less than 5% of their target area for biodiversity conservation protected, and more than 300 vegetation types have less than half their biodiversity target protected within statutory protected areas (NSBA, 2004), there is need for critical evaluation of possible ways by which biodiversity conservation could be more achieved in South Africa; therefore, the focus of this study.

1.5 Organization of the Research Thesis

The remaining parts of this research thesis are arranged in this order: chapter two gives detail situational analysis of the environmental situations of the study area (Nqabara AA) in terms of the economy, social life, biodiversity conservation, land ownership, land-use statues, and the attitudes of the community towards biodiversity conservation. Chapter three provides a critical literature review of experiences elsewhere in Africa (and other developing countries) of models for promoting the conservation of biodiversity on private and communal lands. Chapter four discusses the methodology employed in this study; and chapter five deals with the results and discussions and, finally, the references and appendices are provided at the end.

CHAPTER TWO

STUDY AREA

2.1 Introduction

Following the discussions in chapter one about the problem statement and the rationale for this study, this chapter discusses the Nqabara AA, which is study area of concern, based on its demographical characteristics. Emphasis is laid on the environmental resources therein; and the current threats against these resources from the human-environmental interactions are accordingly noted.

2.2 Nqabara Administrative Area

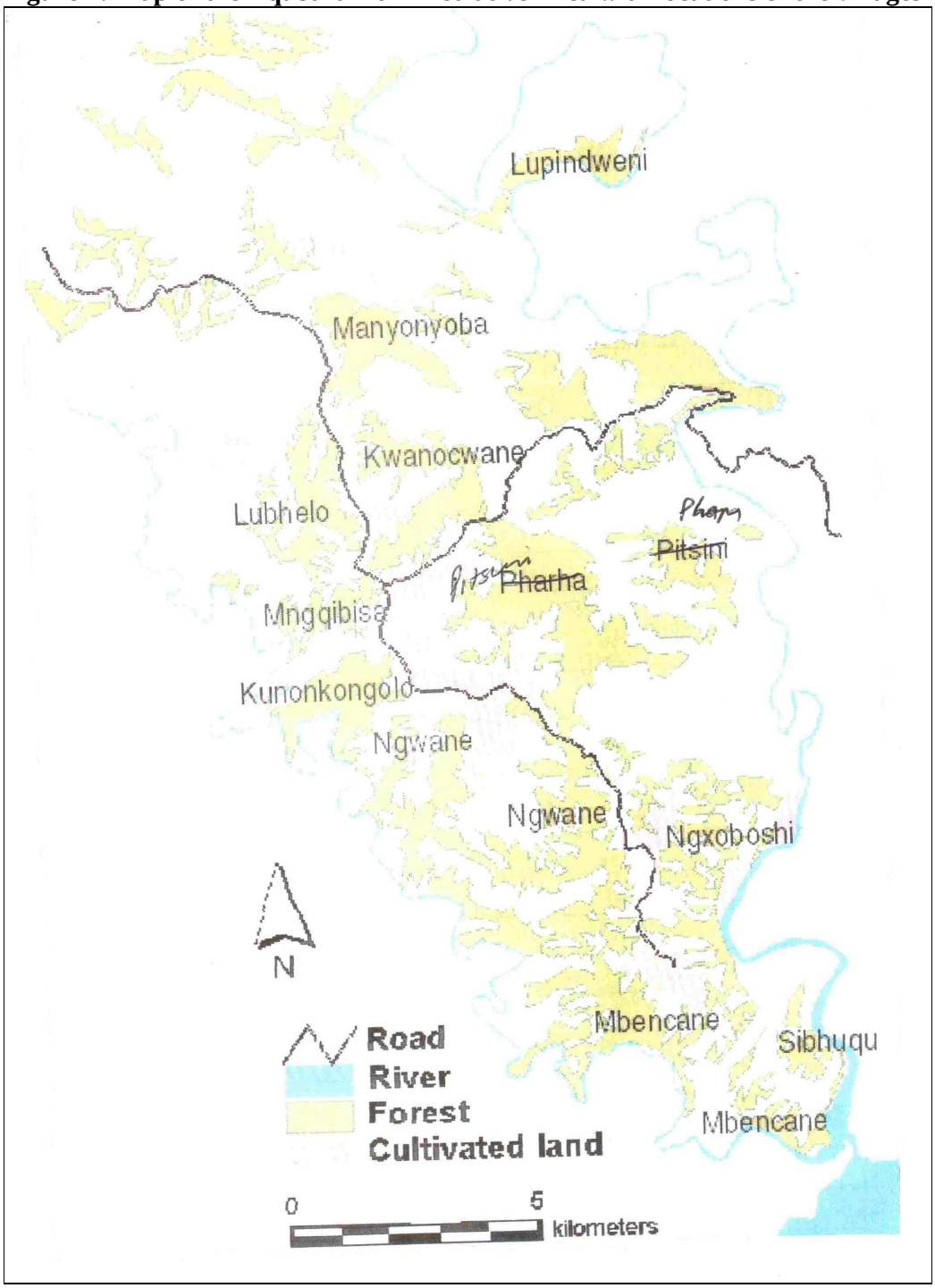
The Nqabara Administrative Area (AA) is located within the Mbashe Local Municipality, Amatole District- in the Eastern Cape Province. The hilly terrain of the area borders onto a section coastline that is known as the Wild Coast. The Nqabara AA is highly identifiable due to its well-defined boundaries- the Nqabara River on the Eastern side and the Nqabarana River on the Western side. Nqabara AA is situated within the Municipal Ward 22. The nearest town which acts as a service centre to it Willowvale; it measures about 42km away from the centre of the Nqabara AA (Mafa Environment and Development cc, 2003).

The land area cover of the Nqabara AA is approximately 7600 hectares. The estuaries, rivers, and indigenous forests within the AA, all, contribute to its importance for biodiversity conservation and development of eco-based tourism (Deutsche Gesellschaft fär Technische Zusammenabeit, 2007). In fact, the area falls within a floristic region known as the Tongaland-Pondoland Regional Mosaic (Palmer, Timmermans, and Fay, 2002). The vegetation can best be described as a grassland–woodland–forest mosaic, with a clear distinction between the boundaries of forests, woodland, and grassland because of the effects of fire and clearing for cultivation. The grassland generally occurs on the high ridges whereas the forest patches occur on the moist deeper soils in the protected valleys, with the woodland in

a transition zone between the forest and the grassland (Mafa Environment and Development cc 2003). Fire, grazing, soils, and micro-climate contribute to the mosaic landscape (Palmer *et al*., 2002).

The Vision Statements for the Nqabara AA, according to the Draft Nqabara Management Plan, is captured in following statements:
'The natural resources of the Nqabara Administrative Area are the foundation for the economic development of our community. These natural resources are sustained through cooperative management underpinned by sensitive development and wise environmental protection. The community is sufficiently empowered to participate in management'.

Figure 1: Map of the Nqabara Administrative Area with locations of the villages



2.2.1 Socio-economic Profile of the Nqabara Administrative Area

Population: According to the population statistics contained in the Draft Nqabara Management Plan, it is evident that there have been declines in the population figures recorded for younger age groups of below 35 years of age since 1996. Factors such as

emigration of people from the AA in search of employment and educational opportunities elsewhere and increased death rate due to HIV/AIDS pandemic have been pointed out as being the major underlying causes of the population decline. Conversely, the figures over time have shown increased population for the older age groups in the same AA. This is attributed to immigration of older and unemployed people from towns and cities into the Nqabara community.

The AA could be termed sparsely or low density area as the population density ranges from 1.16-2.56 persons per hectare to 6.44-7.72 persons per hectare (Deutsche Gesellschaft fär Technische Zusammenabeit, 2007).

Age Distribution within the Community: Based on information from the 2001 Census, the age structure of the Nqabara AA population is reflected as follows:

- 33% of the population falls within 5-14 years of age.
- 57% of the population falls under 20 years of age.
- 24% of the population falls above 45 years of age.

Employment and Income Profile: Employment level ranges from 17-21% (highest) of the economically active population in area like Mtokwane settlement to 2-7% (lowest) of the economically active population other areas like Luphaphasi, Fubesi, Mlanga, and Nqabarana settlements. The overall outlook is that formal employment level in the area is very low; hence the indicated high dependency level of the population on Social Grants and Old Age Pensions as major sources of income for most households.

Consequently to the above-explained situation of the Nqabara community, there is high level of dependence on the natural environmental resources within the area. The community people tap resources from the forests and grasslands in the area for firewood, building materials, medicinal purposes, and for weaving and craft uses. People rare livestock animals and also plant crops in homestead gardens and fields. Based on calculations carried out for the Wild Coast area as a whole, the overall beneficial value from natural resources per household is estimated at between

R3,000.00 to R11,000.00 per annum (Deutsche Gesellschaft fär Technische Zusammenabeit, 2007).

2.2.2 Natural Environmental Resources in Nqabara Administartive Area

Climate: The relatively high temperature and humidity are broken by cooler spells associated with the passage of cold fronts in the summer. Winter months are characterized with cool, dry and generally frost-free atmosphere. Rainfall is often experienced mainly in the summer time (mostly between October and April), and its usual average is more than 1000mm per year (Mafa Environment and Development cc, 2003).

Vegetation: The plant population within the Nqabara AA consists of a mix of forest patches called the Scarp Forest, grasslands called the Transkei Coastal Belt, and savanna woodland called the Eastern Cape Thornveld. The forest patches are found in-between stretches of grasslands. The grasslands are located on the higher ridges while the forest patches occur mainly on the deeper and wetter soils in the valleys. In zones lying between the forest and the grasslands, Acacia karroo (Umnga) woodland is often found. In the community generally, over 170 woody tree species have been identified so far (Palmer *et al*., 2002).

Forest: The main forest in the Nqabara AA is named the Mbencane forest. It's environ has been identified as a good spot for tourism activities. The dominant trees species found in this forest include: *Buxus natalensis, Buxus macowanii, Diospyros dychrophylla, Adenopodia spicata, Acacia karroo, Strychnos heningsii, Hypercanthus amoenus, and Telca natalensis* (McGarry, 2004). The *Buxus macowanii* (traditionally known as Umgalagala) is found specifically restricted to Mbencane forest. McGarry (2004) further noted that multiple uses to which the various forests in the area and their species are put have led to intermediate disturbances to the natural environment in the AA.

Thornveld and Grassland: In the work of Low and Rebelo (1998), the grasslands in the Nqabara AA were classified as Coastal Grassland and grassland in the Eastern

Thorn Bushveld habitat. Acocks (1988) classified these grasslands as parts of the typical Coast belt forest and stated that these grasslands have a strong successional tendency towards thornveld and then forests. Dominant grass species in these habitats include: *Themeda triandra, Tristachya leucothrix, Diheteropogon amplectens, Cymbopogon excavatus, Digitaria spp., Hyparrhenia filipendula,* and *Heteropogon contortus* (Low and Rebelo, 1998; Acocks, 1988). Acacia karoo is the dominant tree specie found there. The other thicket species that are also present there include: *Diospyrus lyciodes, Rhus spp., Scutia myrtina, Maytenus polycantha,* and *Ehritia rigida* (Low and Rebelo, 1998).

In another work done by Tainton (1999), the grassland type was defined as Fire Climax Grassveld. Burning of this grassland is often done annually; this is because the new off-shoot from the burned veld is more nutritious and succulent compared to when it remains unburned. He further explained that, from a conservation perspective, fire can be used to maintain the healthy state of an ecosystem and also biodiversity. Depending on the level at which grazing is done on the Nqabara AA grassland, a lack of fire use could be detrimental to the health of the grassland in that the area may become too dense and moribund. Trollope (1999), in his study, submitted that the Nqabara grassland represents an important part of the attraction that the scenic mosaic gives.

Rivers: The whole Nqabara AA drains out into the major two rivers in the area- Nqabara and Nqabarana rivers. These river valleys serve key resource areas for the rich biodiversity in local flora and fauna and also present opportunities for development of eco-tourism. These rivers represent ideal corridors for nature-based tourism activities such as nature trails and bird watching. In fact, according to the Wild Coast Spatial Development Framework, the estuary in the Nqabara AA is classified an Estuarine Conservation Area (Mafa Environment and Development cc 2003).

Figure 2: Map showing the locations of the threatened plants at Nqabara AA

2.2.3 Environmental Threats from Resource Use

- **Harvesting:** Indications from report show that excessive harvesting and poor management by the Nqabara people have led to increased edge-effect and fragmentation of forests in the Nqabara AA; this in turn has been associated with increased diversity and flexibility of the forest habitat. Going about this, the poor harvesting and management that led to fragmentation could also be presumed to possibly result in habitat loss and decreased health situation of biodiversity and ecosystem as a whole. With this, therefore, one can say that harvesting and poor management constitute threats to the natural environment in the Nqabara community and also to its eco-tourism attraction (Low and Rebelo, 1998).

- **Alien Invasive Plants:** The people of the Nqabara AA complain against some alien plant species that have invaded their lands as constituting a serious threat to the ecosystem and rich biodiversity of the Nqabara AA (McGarry, 2005).

2.2.4 Ecological Knowledge in Nqabara AA

The people of the Nqabara AA are sound in the knowledge of the relationships that exist between biodiversity species and the importance and means of their conservation; although this expertise does not cut across every individual of the community. The individuals with the ecological skill formed a caucus to develop a complex indigenous plan for the management of the forest resources in their environment. For instance, so far, they have been able to set up a nursery for medicinal plants with the help of some external facilitators (Mafa Environment and Development CC, 2005).

2.3 Summary

As noted from the general discussions in this chapter, the Nqabara Administrative Area have been assessed based on its natural resource' wealth and the impending threats these resources face through uses. However, it is worthy to note that the

number of threats facing the resources at the Nqabara Administrative Area are fewer compared to what is obtainable in most rural areas in its surrounding. This, perhaps, may be attributed to the on-going conservation initiative in the community; hence, the reasoning behind the focus of this study to assess the conservation initiative in order to gain insights into the factors that may have contributed to the perceived success so as to inform decision making on biodiversity conservation initiative to be proposed for the Dwesa-Cwebe.

The next chapter focuses on critically evaluating literatures on biodiversity conservation initiatives elsewhere in Africa based on: what forms have conservation initiatives been taking?, what have been the factors underlying their successes or failures?, and what the challenges have, so far, been faced in the course of implementing these initiatives?

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This section reviews the recent academic literatures on strategies for biodiversity conservation outside officially designated protected areas. The following approaches were reviewed: community wildlife management, co-management of biodiversity resources, contractual national parks and stewardships in South Africa. Understanding this literature enables one to assess the relative merits and demerits of the different approaches.

3.2 Community Wildlife Management

Kepe, Cousins and Turner (2001) analyzed the prospects for community wildlife management (CWM) for communities that neighbour Mkambati Nature Reserve on the Wild Coast of the Eastern Cape Province in South Africa. The particular research area was chosen because of the impending problems that compromise the conservation objective in the Nature Reserve. The problems are illegal poaching and thatch grass collection. A spatial development initiative project (SDI) was implemented to help in biodiversity conservation as well as economic development in the rural areas that neighbour the reserve.

Kepe *et al.*, (2001) identified two major issues as being important for any community wildlife management (CWM) to be achieved. The first concerns detail analysis of the resource tenures that operates in the context of consideration. This involves the identification and location of wildlife in the fuller contexts of resources, livelihood, tenures and institution. The second consideration concerns thorough understanding of the power dynamics, the power tussle struggle that exists among the various set of players, and the process that operates for renegotiation of resource tenures.

From their analysis, Kepe *et al*., (2001) identify the issues outlined below as being important for the successful implementation of CWM initiative.

- It is currently found out in Mkambati that collective economic gains from conservation of resources and use of protected resources are often very little as compared to that for individuals and households which are of significant value. Therefore for any CWM programme to be successful, benefits of conservation to individuals and households would have to be given preference over that of the community as a whole.
- Broader and special benefits should be targeted in any community-based conservation initiative for some people (the cream of the society) and local authorities. This could be achieved by helping to stabilize the framework for resource tenures and other related power dynamics.
- It is also confirmed from the experience in Mkambati that the utmost success of CWM relies on the level of economy of the various household involved. The most dependent households on wildlife resources are found out to be the most poor both socially and economically. However, this category of people, unfortunately, is not often the major role player that upholds the management and tenure systems in the rural communities. Therefore, efforts should be made to consider the interests of both classes of people during the planning and implementation of the CWM project.
- Also, the levels and scales at which combined efforts between the major actors- local economic and political interest groups, investors, nature conservation agencies, and economic development agencies- in order to achieve the targeted result should be properly understood. There is no success to be achieved without the support of the rural dwellers.
- Local people should be equipped with information, basic knowledge, and skills that will enable them adopt livelihood practices that are compatible with conservation of biodiversity.
- Biodiversity conservation should be planned in such a way that it enhances provision for the livelihood needs of the community people where CWM is to be implemented.
- Lastly, reasonable span of time should also be budgeted for providing the needed skills and capacities to the community members, and for understanding the intricacies of the power dynamics and resource tenures, and implementation of the CWM programme in any area of interest.

3.3 Co-management of Biodiversity Resources

In a study on co-management, Mburu & Birner (2007) examined the issues relating to the emergence, adoption, and implementation of co-management of wildlife in Kenya with particular emphasis aimed at understanding the conditions that favour the success of the strategy. According to Borrini-Feyerabend et al. (2000), as quoted by Mburu & Birner (2007), co-management, collaborative wildlife, or wildlife partnerships (WP) could be defined as "a partnership by which various stakeholders agree on sharing among themselves the management functions , rights and responsibilities for a given territory, area, or a set of resources which may or may not have protected area status". Taking a close look at this definition, one will clearly see that this management approach seeks to strike a balance between the government-imposed approach (where strict protection operates) and the community-based approach (where the rights to wildlife are solely conferred on the community).

In Kenya, the co-management model of conservation was implemented in the form of WP after the government-led and the community-based approaches have met with failures. The state, through an institution called the Kenya Wildlife Service (KWS), still holds to itself a good level of management rights while providing more room for the participation of the community people (landowners) and other stakeholders in the decision-making and management functions of wildlife resources in the country. Honey (1991) as quoted by Mburu & Birner (2007) states that the framework led to the formation of a community wildlife service (CWS) which was basically targeted at establishing partnership with the rural populace in order to make them receive cash benefits from wildlife that inhabit their lands. Hence, the formation of a favourable political framework by the KWS marks the beginning of adoption of WPs in Kenya.

The major stakeholders in the WPs in Kenya, as indicated by Mburu & Birner (2007), are the state and the landowners; although other stakeholders like NGOs, tour operators, and local hoteliers were involved, they were relative to the different areas involved. However, the different stakeholders were found to have different key interests in the adoption of the strategy. The state agencies, as a stakeholder, were concerned about achieving enhanced wildlife conservation while, at the same time, aiming at achieving lower conflict incidences that occur between the local people and

wildlife. The landowners, on the other hand, were found to be in pursuance of two major things, namely: being able to reduce the costs they bear from the human-wildlife conflicts, and, also, achieving a reasonable level of revenue through the wildlife conservation project.

The adoption and implementation of the WP approach to conservation in Kenya was recorded to have met with success in the following ways:

- The project was found to have enhanced the stewardship levels of the landowners and, also, positively impacted on their perceptions of and attitudes towards wildlife conservation.
- It helped to reduce the human-wildlife conflicts.
- It helped bringing about increased number of wildlife in the country
- It helped at ensuring additional income for the farmers through wildlife.

However, some conditions were highlighted by Mburu & Birner (2007) as being the underlying drivers of success achieved by the conservation strategy. The factors are:

- The availability of political framework and policy options for the KWS.
- The ability of the local people to achieve a level of self-organization among themselves prior to the introduction and implementation of the strategy.
- The incentives provided by the group ranches which afford the local people to get benefits from wildlife conservation.
- The availability of title deeds for the communally held lands involved in the conservation purpose.

However, some challenging issues resulted as externalities to the implementation of WP in Kenya, particularly from the fencing strategy (carving out of a particular area with wire mesh fencing wherein there exist a variety of biodiversity species for the purpose of protection) adopted. These include:

- *In-breeding among large animals:* The wildlife species were confined in areas that are enclosed within electrical wire fencing. This helped to restrict their movement to inside the crop farms and, thereby, refraining them from conflicting with the human beings in their areas. This confinement, however,

has its negative effect in the form of reproduction inefficiency by promoting in-breeding among the animals, most especially the large ones.

- *Loss of socio-cultural wealth:* This occurred due to the fact that the rural people no longer have access to the electrical wire-fenced areas which may initially have served as a social-cultural centre where certain activities were being carried out.
- *Destruction of fauna by the large animals:* The plants within the confined areas, due to restricted movements of the wildlife outside the area, were constantly trampled on by the large animals. This causes the vegetative destruction within the area.

Apart from the above-listed challenges relating to the fencing strategy, there exists another challenge that relates to the distributional and representational issues.

- Landowners complained that the cash accrued from the conservation exercise were not equally shared to them by their leaders.
- They also indicated that they would love to have increased number of representatives that will help put forward their interests in meetings among the stakeholders.

3.3.1 Conditions underlying the success of co-management

Another relevant study on co-management was carried out by Napier, Branch and Harris (2005). The study focused on evaluating the conditions that underlie success of co-management of subsistence fisheries in KwaZulu-Natal, South Africa. They pointed out that several conditions have been identified by various researchers as factors that facilitate successful implementation of co-management to conserve biodiversity. However, they expressed concern that very few studies have been conducted until now to quantitatively evaluate the relative influence of any of these conditions on success of co-management; hence the bases for their research work.

They focused their study on 11 subsistence fisheries that are located within7 rural settlements in the KwaZulu-Natal, South Africa. They targeted the authorities and the community members (resource users) for relevant information to their study.

Precisely, the sources surveyed are: (a) the provincial coordinators that are in charge of managing all the 19 local communities, (b) key local informants who may either be an independent or government employed researcher or facilitator, (c) representatives of the authorities (d) representatives for the communities, (e) the fishers that have voluntarily pledged to abide by the laid down rules and regulations.

For in-depth understanding of the subject matter, the study was designed to provide answers to four main questions, which are:

- What are the prevailing circumstances in the rural areas where co-management has been implemented?
- What factors are mostly correlated with success achieved by co-management?
- Is there agreement between the communities and the authorities in regards to accomplishment of the conditions and success of co-management?
- Any ray of hope for co-management in South Africa and what impending conditions potentially serve as hindrances to fully implement it?

***Circumstances of the communities*:** In agreement with the conditions given in the Living Marine Resource Act that govern fishing in South Africa, Branch *et al*. (2002a, p.481), as quoted by Napier *et al.*, (2005), defined the qualities of a subsistence fisher as: 'Subsistence fishers are poor people who personally harvest marine resources as a source of food or to sell them to meet the basic needs of food security; they operate on or near to the shore or in estuaries, live in close proximity to the resource, consume or sell the resources locally, use low technology gear (often as part of along- standing community-based or cultural practice), and the kind of resources they harvest generate only sufficient returns to meet the basic needs of food security.'

Going about the above definition Napier *et al*., (2005) concluded in their study that all the communities they considered as places where co-management has been implemented have their profiles clearly agreeing with the key elements enlisted in the definition above. All the communities are deeply stricken by poverty evident by limited infrastructure, lack of electricity and piped water, limited facilities for both education and health services, and so forth. All the communities are in close

proximity to the fisheries and the local people operate near to the shores. In fact, mainly for the fact that fishing activity is done for food security purpose, the history of fishing is found to have dated back to the date the communities were established.

***Conditions and their correlations with perceived success*:** Napier *et al*., (2005) quoted Sowman *et al*., (2003) as reporting that 16 different conditions exist for successful implementation of co-management. However, Napier *et al*., (2005), in their findings, concluded that only 9 of the conditions have been significantly correlated with perceived co-management success. The conditions are under-listed starting with the most correlated to the least correlated.

- The factor that showed the strongest relevance to success was that the benefits derivable from co-management should outweigh the costs borne out of participation for the local people. Therefore, Napier *et al*.(2005), quoting from several authors, identified potential benefits that can be derived from co-management as sustainable resource harvesting Sowman *et al*., (2003), reduced incidences of conflicts due to higher legitimacy (Hara, 2003), improved level of communication and trust among stakeholders (Pinkerton, 1989), legal accessibility to natural resources, empowerment for communities, enhanced knowledge (Sowman *et al.*, 2003), better resource monitoring and data collection, and improved resources protection (Berkes, 1994). The costs identified are limitation of access to resources, restriction of methods of harvesting, and the time and financial costs involved (Sowman *et al.*, 2003). However, Napier *et al.*, (2005) indicated that the most valued benefit of co-management by the interviewed communities is acquisition of legal rights. They further noted that the interviewee believe that, not until this is attained, the cost of their participation in co-management will be considered higher that the benefits they earn from it.
- Training and empowerment ranked the second most correlated condition to successful implementation of co-management. Napier *et al.*, (2005) indicated that for co-management to be successful, all stakeholders need to be well equipped in relevant knowledge such as: fisheries management, resolution of conflicts, and the principles underlying co-management.

- Having a full-time leader that champions the course of co-management was ranked as being the third most correlated condition for success.
- Decentralization and devolution of authority ranked the fourth.
- Adequate time and funding that will enhance co-management to take its full grasp ranked the fifth.
- Government long-term involvement in the project was ranked the sixth.
- Favourable legislation and policies were also indicated as very important ranked the seventh.
- Education and training that enhance the community members' understanding of the necessity for regulations also correlated strongly with co-management success; and it ranked the eighth.
- Acquisition of access rights by the communities serve strong incentive for their involvement and it also showed strong correlation with success; and it was ranked the ninth.
- The last of the factors that showed strong correlation with success of co-management is effective monitoring of resources.

***Accord between-authorities and communities*:** Napier *et al.,* (2005) also indicated in their study that there was concurrence between the authorities and communities as regards the extent to which fulfilments of conditions have been achieved; however, they concluded that the communities were somehow conservative in their scoring. In contrast, they submitted that perceptions of success between the two players were not significantly correlated; this was attributed to some differences inherent in three of the fisheries.

Does co-management have hope in South-Africa: Napier *et al.,* (2005) indicated that 12 of the 17 questions asked from the stakeholders concerning their perceptions bout the success of co-management gained almost the highest rating. The 2 most highly rated of them being: 'Are you happy with co-management in general?' and 'Do you think t will improve the life of the community?'. In conclusion, however, they submitted that there exist general perceptions of co-management being a successful strategy through which natural resources conservation and community development can be achieved.

3.4 Contractual National Parks

Reid, Fig, Magome, and Leader-Williams (2004) carried out a research study on the co-management of Contractual National Parks (CNP) in South Africa and Australia. These researchers concluded on some lessons that South Africa could learn from Australia. The basis for the study was to show the success achieved so far by CNPs in both South Africa and Australia in order to oppose the renaissance of the protectionists methods to achieving biodiversity conservation.

Reid *et al.,* (2004) confirmed that the establishment of CNPs in South Africa and Australia was done either on state owned lands or on lands that belong to group of individuals. However, these parks are being managed by national conservation authorities in accordance with some agreements drawn up by joint management committee (a collection of representatives for both the national conservation authority and the landowners).

In South Africa, after the swearing in of the democratically elected government in 1994, the South African CNPs developed a model to be used in the management of the parks. The model was designed such that it could help them achieve conservation of priority biodiversity species while, at the same time, meeting up with targeted development objectives for landowners who happen to be previously disadvantaged communities.

Same is the situation in Australia, as observed by Reid *et al*., (2004), the Uluru-Kata Tjuta and Kakadu National Parks which were established on lands belonging to a community called Aboriginal have also been managed, for over 15 years now, based on a co-management agreement between the landowners and the national conservation authority. Considering the levels of similarities existing between the CNPs of the two countries and the old existence of those in Australia, Reid *et al.*, (2004) deduced some lessons that could be imbibed by South Africa to enhance its conservation and development objectives targeted for the CNPs. The lessons are listed as follows:

1) Valuing and prioritization of cultural and development-tailored conservation methods above the protectionists approach.

2) South African CNPs should be more flexible in their stance against habitation and harvest of natural resources within the protected areas.
3) Innovative thinking should be done to unravel potential income-yielding opportunities from protected areas, and probably delving seriously into cultural attraction opportunities.
4) Creating good reasons for the state to support with funding.
5) Seeking various means through which protection of biodiversity could bring about increased employment opportunities.
6) Incorporation of private sector into management to enhance employment opportunities and quality of training.
7) Regular reviewing and updating of co-management plans and contracts; and security of legislation back-ups for agreements.
8) Provision of appropriate resources that will enhance and support the dynamism of responsibility sharing involved in co-management.
9)Ensuring that power is equitably shared among the stakeholders in terms of decision-making through formation of legal joint management board.

3.5 Stewardship in South Africa: EKZNW Stewardships

The term *stewardship*, in the definition of the EKZNW (2008), is: "the wise use, management and protection of that which has been entrusted to you as landowner or is rightfully yours." The Ezemvelo KwaZulu-Natal Wildlife (EKZNW) indicated that KwaZulu Natal has a vast diversity of wildlife and plant species that need to be protected; however, only 53% of the total species have been protected within the boundaries of the current network of protected areas. Based on its assessment of the prevalence of biodiversity in the province, the organisation discovered that not less than 1.4 million hectare (14.5% of the total provincial land area) need to be incorporated into the formal conservation network. Not until this is done, efficient protection of biodiversity that exists within the province is not realisable.

Most parts of this discovered area, harbouring 80% of the priority biodiversity, face serious land conversions and degradation very speedily because they either belong to private individuals or communities who employ them in alternative land uses that are

not consistent with biodiversity conservation. This necessitated the EKZNW to think of partnership strategies that could be employed to engage landowners in land use practices that support protection of biodiversity. Therefore, as an obligation, the EKZNW aims at achieving representative conservation of all the biodiversity types within their province so as to maintain continued supplies of the ecosystem benefits that the people of the province ever since enjoy.

The first attempt made by the EKZNW led to their formation and development of 25 different options of stewardship programme which include: conservancies, private nature reserves, sites of conservation significance, natural heritage sites, and biospheres. Unluckily, these stewardship options were later discovered incapable of ensuring long-term success for biodiversity conservation, they possess no legal support, and are very complex systems to implement. To overcome all these deficiencies, therefore, the EKZNW developed a new stewardship programme (EKZN Biodiversity Stewardship) with slightly different concepts from the stewardship of the old. With the new concept, the stewardship programme is able to provide biodiversity management options with secured legal backup and, at the same time, offer set of benefits to landowners for their participation. In the table below is the summary of the different categories of new stewardship options designed by the EKZNW.

The EKZNW (2008) identified a list of limitations that hindered their former management options applied to the private and communal lands from being successful; they are:

- The issue of sites insecurity.
- Lack of long-term biodiversity security.
- Limited joint efforts among stakeholders.
- Lack of efficient management plans for properties.
- Limited enforcement of obligations on stakeholders.
- Lack of sites auditing and monitoring.
- Lack of penalties for inadequate management.
- Biodiversity values of lands do not imply their importance.
- Much supervision was required.

With all these limitations in mind, the new stewardship approach was designed in such a way that it recognizes:

- The different potential contributions that could be made by both private and communal landowners on biodiversity conservation.
- That financial benefit should be achieved by landowners for participating in the conservation action.
- That land owners should be incentivised so as to motivate them to have continued support for biodiversity conservation on their lands.
- That it needs gaining the legal support from the National Environmental Management Act, the Biodiversity Act and the Protected Areas Act.
- That long-term protection for biodiversity should be the target; and
- The fact that sites for protection are to be monitored and audited.

Table 1: Characteristics of the new stewardship category options by the EKZNW:

Option	**Level 1-Conservation Area**	**Level 2- Biodiversity Agreement**	**Level 2- Protected Environment**	**Level 3- Nature Reserves**
Which option applies to your land	- Any natural land is suitable -If rare or endangered habitats, rather progress to higher level of conservation security - Can use this as a stepping stone to more security later on in process	- Suitable for any conservation worthy land - Not excluding small and isolated fragments	- Useful to pursue where large landscapes require some form of conservation management, but where it is necessary or unsuitable to restrict other forms of extractive land use - Multiple properties, buffers to statutory Pas	- Priority areas adjacent to statutory reserves or sufficiently large to be self-contained ecosystems - Containing critically important species, habitats, and self contained sites

Legal status/duration	- Flexible option with no defined period of commitment	- Has legal status by virtue of a legal contract between the landowner and the agency. Minimum period of 5-10yrs suggested (ideally 10yrs or more), but may be in perpetuity if requested by the landowner	- Legal declaration under the PA act - The duration for protected environments declared for other purposes is not defined	- Minimum of 30yrs to perpetuity
Possible land use limitations	- Very few, but the areas need to maintain its natural character	- Lands must be managed in a way that will support natural processes	- There is no limitation on activities other than those specifically listed in the gazetting notice of the establishment of the Protected Environment	- No further development or land use rights will be allowed - Access and resident rights are unrestricted - Owners retain title
Benefits to the landowners	- Advice and support through basic extension	- Specific agreements for fire, alien, plant and animal management	- Sustainable assistance with	- Sustainable assistance with

	services - Assistance with management plans and farm maps	- Advanced extension services (e.g. alien clearing planning)	habitat management - Advanced extension services (alien clearing planning) - Regulate the use of the landscape through a cooperation between various landowners	habitat management - Increased recognition and marketing exposure - Conservation authorities will be able to lobby on your behalf for incentives e.g. rates exemptions

Source: Ezemvelo KZN Wildlife-Biodiversity Stewardship Operations Manual (version 2, March 2008).

3.5.1 Principles Guiding the EKZNW Stewardships

The EKZNW indicated the followings as the principles that guide their stewardship strategies.

1. ***Landowner-focused extension*:** This implies that a set of extension services should be provided to the landowners through extension officers (who may likely be staff members of the conservation authorities) so as to enable them to properly implement land uses that are consistent with biodiversity conservation.
2. ***Acknowledging People's needs:*** The provision of the extension services should be based on consideration of the needs of the landowners. This will enable the conservation authority to design appropriate package of incentives that can best motivate landowners to adopt better conservation practices.
3. ***Focus on biodiversity priorities:*** Rather than trying to concentrate resources on identifying potential areas for biodiversity conservation, effort should fully be geared at implementing stewardships on areas already confirmed to contain endemism of biodiversity. These areas can be identified from the lists of priority locations provided by the South African Biodiversity Institute (SANBI) and the provincial conservation authorities.
4. ***Biodiversity as the bottom line:*** Making choices of lands for implementation of conservation venture should strictly be based on the biodiversity value of the lands. The issue of nepotism, economic status, and political positions of the owners should be totally ignored in decision making processes for stewardship implementation.
5. ***Site security:*** Security of lands to be used for conservation investment should be ascertained through agreements for biodiversity stewardship between the conservation authorities and the landowners.
6. ***Building cooperation:*** A good level of trust and partnership should be created among the stakeholders (the conservation authorities, the state, private landowners, communities, and NGOs) in order to efficiently implement the stewardship programme.

3.5.2 General Threats Dealt with by the Ongoing Stewardship Programme

The current stewardship programme, in order to enhance conservation of biodiversity, is currently dealing with the following threats:

1. Over-harvesting of marine and estuarine resources.
2. Over-extraction of forest resources.
3. Unsustainable extraction of both medicinal and ornamental plants.
4. General habitat degradation.
5. Widespread nature of invasive alien species.
6. Land clearing for agricultural purposes.
7. Illegal harvesting of wild animals that destroy agricultural plants.

3.6 Summary

Following the reviews of the various strategies that have been used in the different contexts for conservation of biodiversity species outside officially designated protected areas, the next chapter discusses the conceptual framework employed in this study to unravel the on-going conservation initiative at the Nqabara Administrative Area relative to the conditions underlying its success and the research designs employed in this study.

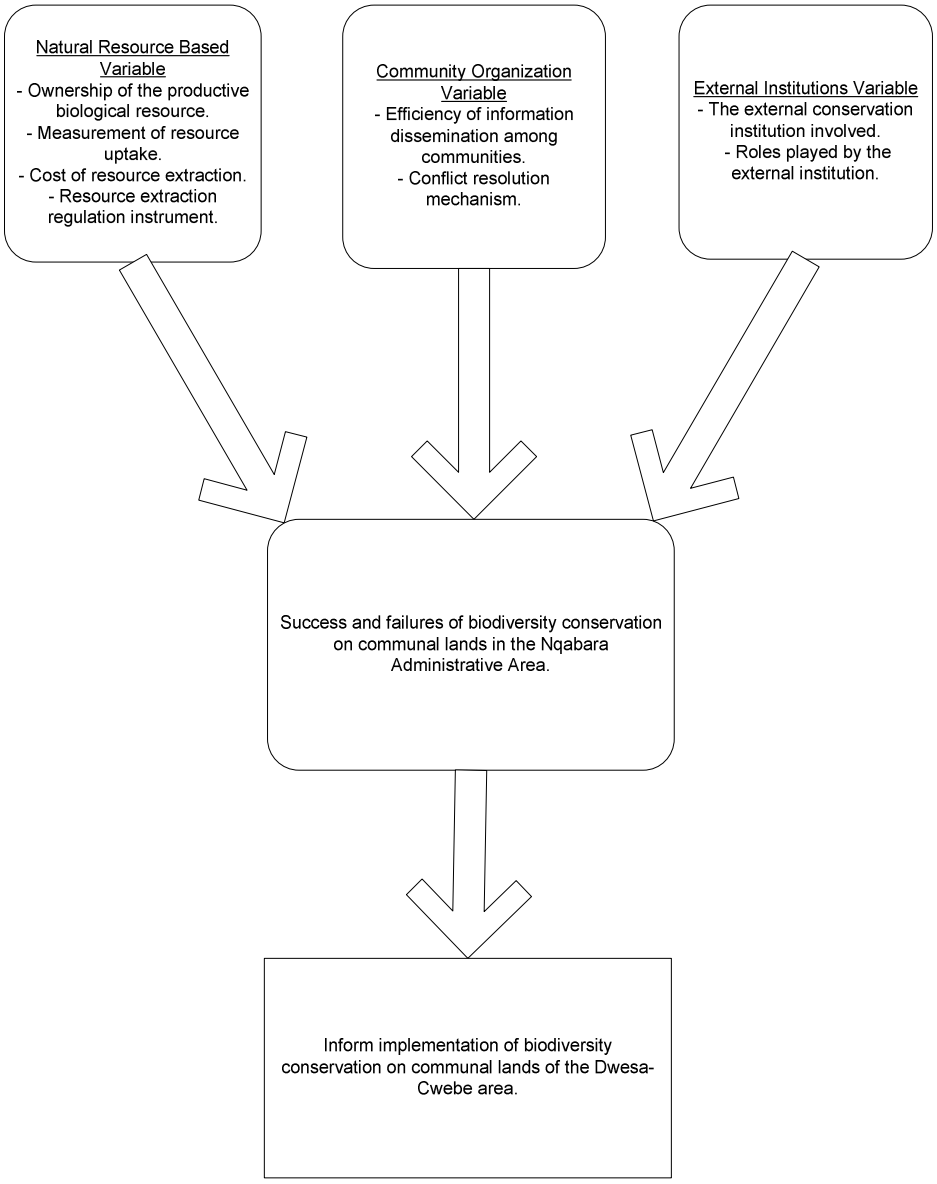
CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

The previous chapter outlines the various conservation strategies that are currently being used to conserve biodiversity on communal lands. This chapter presents the conceptual framework underpinning the methodology used in this study to assess the community conservation programme at the Nqabara AA in order to craft a suitable model towards extending conservation of biodiversity onto the communal lands of the Dwesa/Cwebe in South Africa.

4.2 The Conceptual Framework



From the conceptual framework above, the overall objective of this research work is to implement biodiversity conservation on the communal lands of the Dwesa-Cwebe. To achieve this, the study employs a detail assessment of the Nqabara Administrative Area based on the success and failure of its ongoing biodiversity conservation initiative. The underlying reasoning behind this is to learn some valuable lessons from the Nqabara Administrative Area in order to inform decision making for the implementation of a conservation programme at the Dwesa-Cwebe.

Thus, to properly evaluate the community conservation initiative at the Nqabara Administrative Area, this study makes use of some certain constructs and these are: the natural resource based variables, the community organization variables, and the external institution variables as presented in the conceptual framework. These constructs are conceived in this research to be of utmost and invaluable importance in understanding the complex model through which the conservation initiative at the Nqabara works. They are thus considered in detail in this work in order to measure their individual contributions to the overall success or failure of the initiative.

The natural resource based variables consist of the kinds of biodiversity species being conserved at the Nqabara Administrative Area; on which land are these biodiversity species located; who has the access rights to them; how are these resources monitored in terms of quantity that could be harvested at a time; and the regulations put in place against violation of general management rules for their conservation.

The community organization variables are derived from the fact that the natural resources management has to rely with the community if the resources are occurring on the community lands. Based on that, this study considers coherency level within the community in terms of unison of thoughts and ideas, information dissemination methods being adopted to make sure that decisions made on conservation issues are fully aware of throughout the community, and the institutions placed on ground to assist on conflict resolution among the different community stakeholders involved in the conservation exercise.

The external institution variables pointed out in the conceptual framework refers to the outside agencies that are involved in a way or the other, towards making sure that the conservation initiative at the Nqabara Administrative Area is a success. This construct comes about based on the conception that the Nqabara community, being rural and mostly uneducated could not have possessed adequate conservation knowledge and skills that could have enabled them to initiate a conservation programme regardless of ensuring that it does not result to a failure. This study assumes that there must be forces of some external institutions behind the whole initiative. In this respect, the external institution variables encompass factors like; which external bodies are involved in the conservation exercise and which roles they have played to make sure that the community is adequately trained and equipped in order to carry out their conservation role, with regards to the natural resources found on the communal lands.

4.3 Data collection based on each construct

As observable in the conceptual framework, there are some listed factors under each of the constructs upon which data is to be collected in order to fully gain the understanding intended for the individual construct. In respect to this, a focus group discussion was carried out at the Nqabara Administrative Area with all the local bodies, constituting the key community stakeholders involved in the community biodiversity conservation exercise. The various broad topics (constructs) tackled in the discussion and the underlying reasons behind each of the factors measured for each of the construct is hereby detailed as below.

4.3.1 Natural resource based variable

- *The tenure system of the lands with the biodiversity*: Understanding the tenure system could be very important in determining either the success or failure of the conservation activities. In fact, this presumption goes in line with the submission of Muchapondwa *et* al. (2009) who reports that various systems of tenure underpin the land use mosaic. For example, state-owned lands,

communal lands, private lands, and that for the commons would definitely have different uses to which each could be put.

- *Resource uptake measurement and monitoring*: This was investigated to confirm if the proclaimed conservation initiative which gave reasonable allowance to resource use for the sustenance of livelihood is actually going to stand the test of time. This is because one could actually consider it logical to think that the rate at which resources are being harvested from the conservation area should not by any means outweigh the rate of regeneration of the resources themselves in order for the ecosystem to remain balanced without obvious depletion of biodiversity species.

4.3.2 External institution variable

- *Roles of the conservation agency involved*: Since the level of education and know-how mostly found in local communities is very low and would not in most cases, be adequate to actually carry out conservation activities at a standardized level, most efforts for conservation do involve supports from one conservation agency or more. Therefore, it is imperative to assume that there could have been an external conservation agency in the case of the NAA which could have contributed so immensely to make the initiative a success.

4.3.3 Community organization variable

- *Organization and coherency level within the community*: The researcher presumes that conservation initiative on a communal land could not have been possible without a reasonable level of understanding among the people in the community. Therefore, the focused group was asked questions relating to how they coordinate themselves and actually see that almost everybody follows the same direction.
- *Efficiency of information dissemination and conflict resolution structure*: Without proper and efficient means of disseminating information among all the villages under the NAA, there could be lots of distortions in information which could possibly lead to chaotic situations at times in the area.

Nevertheless, the fact could not as well be ruled out that with good information dissemination system, there is still the possibility of having misunderstandings at times. In situations like this, the researcher wishes to know how the community resolves their differences.

4.4. Description of the overall research design

The research design adopted for this study could generally be classified as an exploratory qualitative case study. Following is the detailed explanation of the underlying reasoning for choosing this design in the light of the research problem being tackled in this work.

4.4.1 Exploratory

According to Yin (2003), a study could be considered exploratory when no good theoretical proposition could be ascertained due to inadequate knowledge base before the commencement of data collection for the study. In the light of this submission, this study could be described as exploratory in that no prior publication is known of to have dealt with the evaluation of the on-going biodiversity conservation initiative at the Nqabara Administrative Area before the commencement of this study.

Saunders, Lewis and Thornhill (2007) also note that exploratory studies focus on clarification and improvement of understanding and perceptions of a problem most of the time. This statement also indicates that this study could as well be classified as exploratory in the sense that Nqabara is being unraveled as to the factors underpinning the perceived success of its ongoing biodiversity conservation.

4.4.2 Case study

Case studies most often serve an excellent overall research design when dealing with exploratory studies and when trying to reveal factors or conditions that underpin certain phenomenon (Gerring, 2007). In addition, Yin (2003) also states that a case study “is an empirical inquiry that investigates a contemporary phenomenon within

its real life context, especially when the boundaries between phenomenon and context are not clearly evident". Furthermore, he notes that case studies serve as a favored research design when answering a "why" or "how" question about existing situations when behavior cannot be manipulated. For this work therefore, a case study is a suitable research since the issue of biodiversity conservation on communal lands which forms the theme of investigation is an environmental issue which is inseparable from the communities concerned relatively to their livelihood activities.

A case study as a research design could further be argued to be the best for this study in that the intention behind this work is to make a replica of a particular working model (conservation initiative at Nqabara Administrative Area) in a similar environment (Dwesa-Cwebe area). This agrees with the submission of Yin (2003) who states that case selection is based on replication logic.

4.4.3 Qualitative

A case study is either quantitative or qualitative in nature. Most often, qualitative study is exploratory and is aimed unraveling complex condition of phenomena (Leedy and Omrod, 2005). Following this explanation, this study which is aimed at understanding the underlining factors behind the successful implementation of community biodiversity conservation on the communal lands of the Nqabara Administrative Area in order to inform decision-making for a similar initiative at the Dwesa-Cwebe could best be carried out using a qualitative research design approach.

4.4.4 Focus group discussion- the data collection method

Focus group discussions are a form of group interview which rely mainly on guided dialogue among research participants on various aspects of a general topic, for the sole purpose of generating valuable data that could help in arriving at reasonable decision-making results (Krueger and Casey, 2000). In the light of this, this study carried out a focus group discussion at the Nqabara Administrative Area to uncover issues and factors that contributes to the successful implementation of community biodiversity. The questions asked were semi-structured and they allowed the

researcher to be flexible and probe in order to go into more depths and clarify misunderstanding of participants' response to questions asked. Interviews were conducted on dates of appointments given by the participants. I interviewed the participants until data was saturated, that is, until no new information was forth-coming from the participants. Eighteen open-ended questions were posed to the respondents who mainly comprised of representatives from the different interest groups that constitute the local stakeholder bodies to the biodiversity conservation initiative (that is, the Nqabara Tourism Development Trust, [NTDT]). The total number of participants is thirty (30) people, with sex ratio of 18 males to 12 females. The number of villages under the umbrella name Nqabara AA is ten (10), and each village was represented by three people which made our sample's spatial allocation absolutely even.

The researcher could only speak and understand English language and, for that, an interpreter was used to translate the conversation from English language to the local language of the respondents, and also vice versa. A tape recorder was used to capture all the information generated from the group discussion in alternative to hand-recording on papers by the researcher. The tape recording was later transcribed and merged with the information recorded on papers for critical evaluation in order to properly group the information into various meaningful subheadings of contributing factors to the successful implementation of the conservation initiative.

4.4.5 Data analysis

To analyze qualitative data, Henning (2005) proposes the use of content analysis. He notes that content analysis implies that the researcher identifies the main elements from the responses given by the research respondents in order to determine evolving ideas. In this study therefore, focus was directed on all the reactions from the research respondents as regards the directed questions on the factors that have ensured the perceived successful accomplishment of the conservation programme at the Nqabara community. In this regard, this study was able to identify points with commonalities and differences, which were then cautiously articulated under the different sub-headings (Codes) for proper presentation of the results.

4.5 Summary

The above-explained overall research design was used to obtain both the basic and applied results intended for this study. Basic research is one that is carried out with the sole purpose of generating results that only make theoretical contribution to the current knowledge about a particular issue while applied research is aimed at contributing practical knowledge that could be employed to deal with practical problems (Leedy and Omrod, 2005). This study, therefore, provides the two types of results. It helps in adding to the current theoretical knowledge on the factors necessary for any community biodiversity conservation to be successfully implemented while, at the same time, providing information that will be employed in decision-making process of implementing a biodiversity conservation initiative on the communal lands of the Dwesa-Cwebe area at the Eastern Cape.

The next chapter discusses the results got from the focus group discussion carried out at the Nqabara Administrative Area, the lessons that could be learnt by the Dwesa-Cwebe community, and the conclusions and recommendations of this research study.

CHAPTER FIVE

RESULTS AND DISCUSSIONS

5.1 Introduction

The previous chapter discussed the methodology used in this research work to generate the necessary information needed to arrive at meeting up with the central target objective of this study. This chapter focuses on detailing the generated results from the information gathered in the course of the focused group discussions; and recommendations of the necessary conditions that must be fulfilled in order to successfully extend biodiversity conservation onto the communal lands of the Dwesa-Cwebe. Nevertheless, the findings of this study are categorised under the following headings.

5.2 Natural Resources Management in the Nqabara Administrative Area

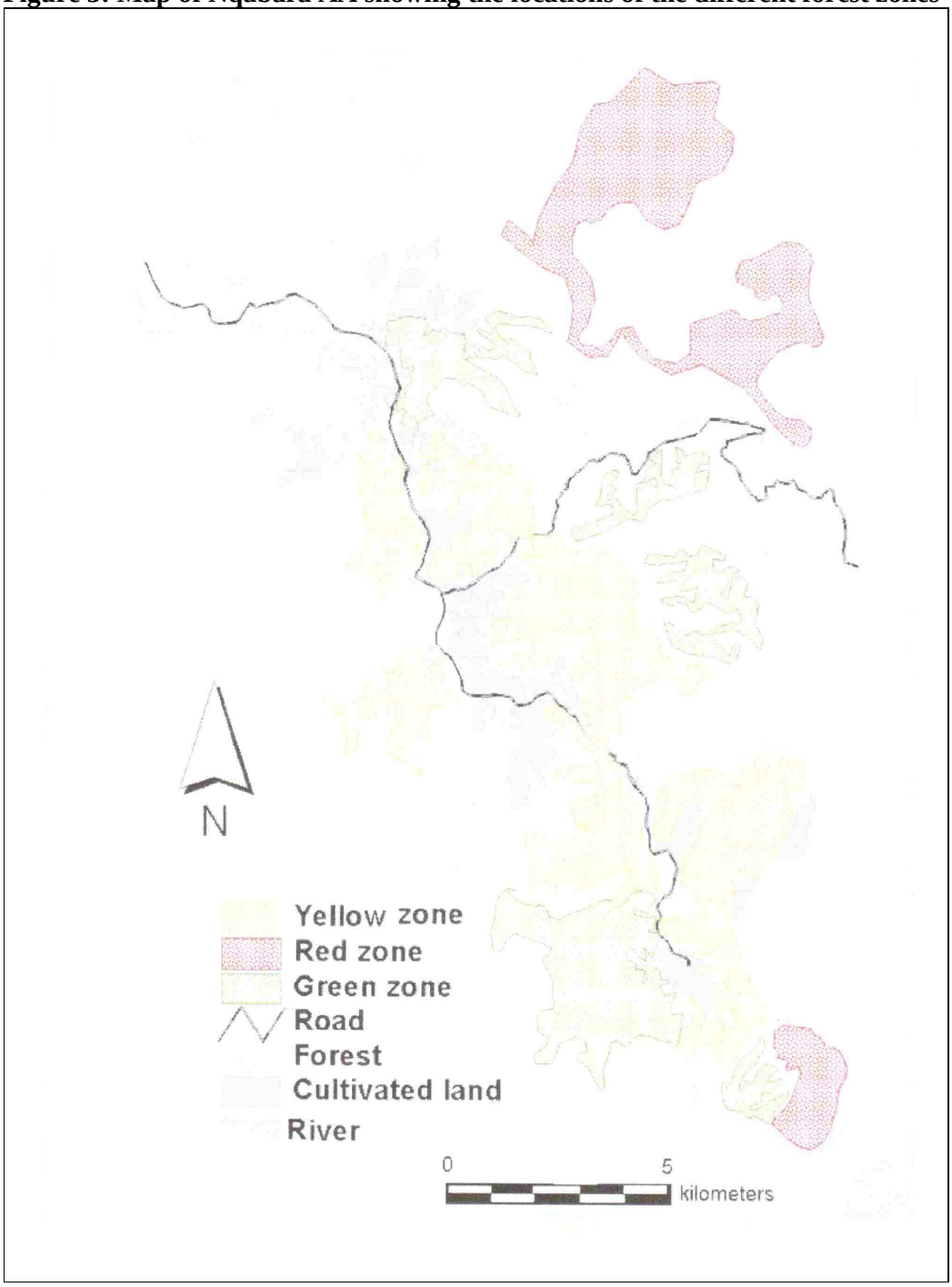
The focus group indicated that the lands on which biodiversity species of conservation importance are found belong to the community as a whole and they are placed under the management of the Chief Head of the Nqabara community. On the basis of this, the whole community has entitlements to access and harvest the resources found in the forest. This factor seems very vital to achieving success in any community conservation management initiative as it agrees with the submission of Kepe *et al.*, (2001) relatively to the underlying factors for community wildlife management initiative for the community that neighbors the Mkambati Nature Reserve on the Wild Coast of the Eastern Cape. Among the resources listed for harvesting are: herbs, fire woods, logs of wood for building homesteads and, hides of animals and their horns for preservation of herbs by the traditional healers. These harvests are made to enhance meeting up with the livelihood needs of the community. This factor also agrees with the points noted by Kepe *et al. (2001)* on the observed conditions that contributed to the success achieved in community conservation on the Wild Coast as earlier stated. Regular harvesting of these forest resources was evident as the researcher also observed some displayed products made from hides and

thornvelds that claimed to have harvested from the forest.

The community, considering their interest to engage in conservation of the biodiversities on their land through sustainable use, began by listing those species that are mostly harvested for meeting up with their livelihood needs. These species were later ranked to create a priority list in terms of impending possibilities of extinction based on utilization, and consequent management requirements to salvage the situation.

Furthermore, the community divided the lands and resources to be managed into three zones based on assumed levels of conservation importance (judging with their local knowledge), species utilization rate, ages and sizes of the species. The different zones are: Red (protected and tourist zones), yellow (controlled use zone), and green (sustainable consumptive use zone). The zones are not fenced-off one another for demarcation but concrete beacons and signage are provided at different points to indicate boundaries.

Figure 3: Map of Nqabara AA showing the locations of the different forest zones



Moreover, different rules for access and harvesting and penalties were set for the different zones by the Participatory Forest Management (PFM) committee. The focus group indicated that the traditional ruler is in charge of issuing permits to any member of the community who is willing to go into the forest area for harvesting any of its

resources; and this is a very strong point worthy of being noted. It agrees with the submission made by Napier *et al.* (2005) that having a full-time leader that spearheads a co-management initiative ranks the third factor which strongly correlates with the perceived biodiversity conservation success observed in the subsistence fisheries initiative in the Kwa-Zulu Natal of South Africa. Furthermore, confiscation of illegally harvested resources and fines of R100 and R150 (relative to the red and yellow zones respectively) are the stipulated penalties for violations.

Relatively to the overall resource conservation exercise, the only cost indicated to be concurrently incurred by the community is improper tree felling methods that some of the community member practice as against the recommendation within the allowances under good conservation practices. The group indicated that this issue is at the moment being looked into, and that appropriate measures would be laid against it in the nearest future. This type of cost was also reported by Napier *et al*. (2005) when they noted that restriction methods of harvesting based on conservation, form one of the costs that could be considered by a community when juxtaposing the costs and benefits of any conservation initiative in order to consider their stand relatively to its acceptance or rejection.

5.3 Community Organization Variables that affect Natural Resources Management in the Nqabara Administrative Area

Ten villages are under the umbrella of the Nqabara community. These villages each have representatives in a body termed the Nqabara Tourism Development Trust (NTDT) which was formed in year 2003. This body is charged with the responsibility of assessing and overseeing any development initiative that is to be adopted within the Nqabara community. So far, the body has been praised for a job well-done by creating and maintaining smooth running linkages with some other institutions within the community area as well as with external governmental and non-governmental institutions to bring about development initiatives into the community. They also noted that the members constituting the NTDT each have a membership tag of at least one of the other initiative committees. The focus group noted that this helps them in proper information dissemination among the different groups constituting the

management committee for each of the development initiatives created within the community.

Furthermore, the NTDT has made it a point of duty to organize annual general meeting (AGM) with the community members for the purpose of proper accounts reports, information sharing and coherent decision making. And so far, this has been persistent and yielding good results by creating united thoughts and generally acceptable line of action in the whole community.

To conclude with, this study has observed that the level of unity in the Nqabara community is very high as the responses given to almost all the questions are very homogenous. No obvious discrepancies were observed in their responses and views in relation to the conservation practices. Therefore, unity may perhaps be an important contributing factor to the success of the conservation exercise because it aligns with one of the drivers of success noted by Mburu and Birner (2007) when discussing the underlying factors that enhanced the emergence, adoption and implementation of co-management of wildlife in Kenya.

5.4 External Institutions that affect Natural Resources Management in the Nqabara Administrative Area

The major external institutions currently in partnership with the NTDT are by names; RuLiv, GTZ Transform and the Department of Water Affairs and Forestry (DWAF). With the help of these actors therefore, the community has been able to establish some projects under the umbrella of a Community Based Natural Resource Management (CBNRM) and Local Economic Development (LED) initiative. These projects are as follows:

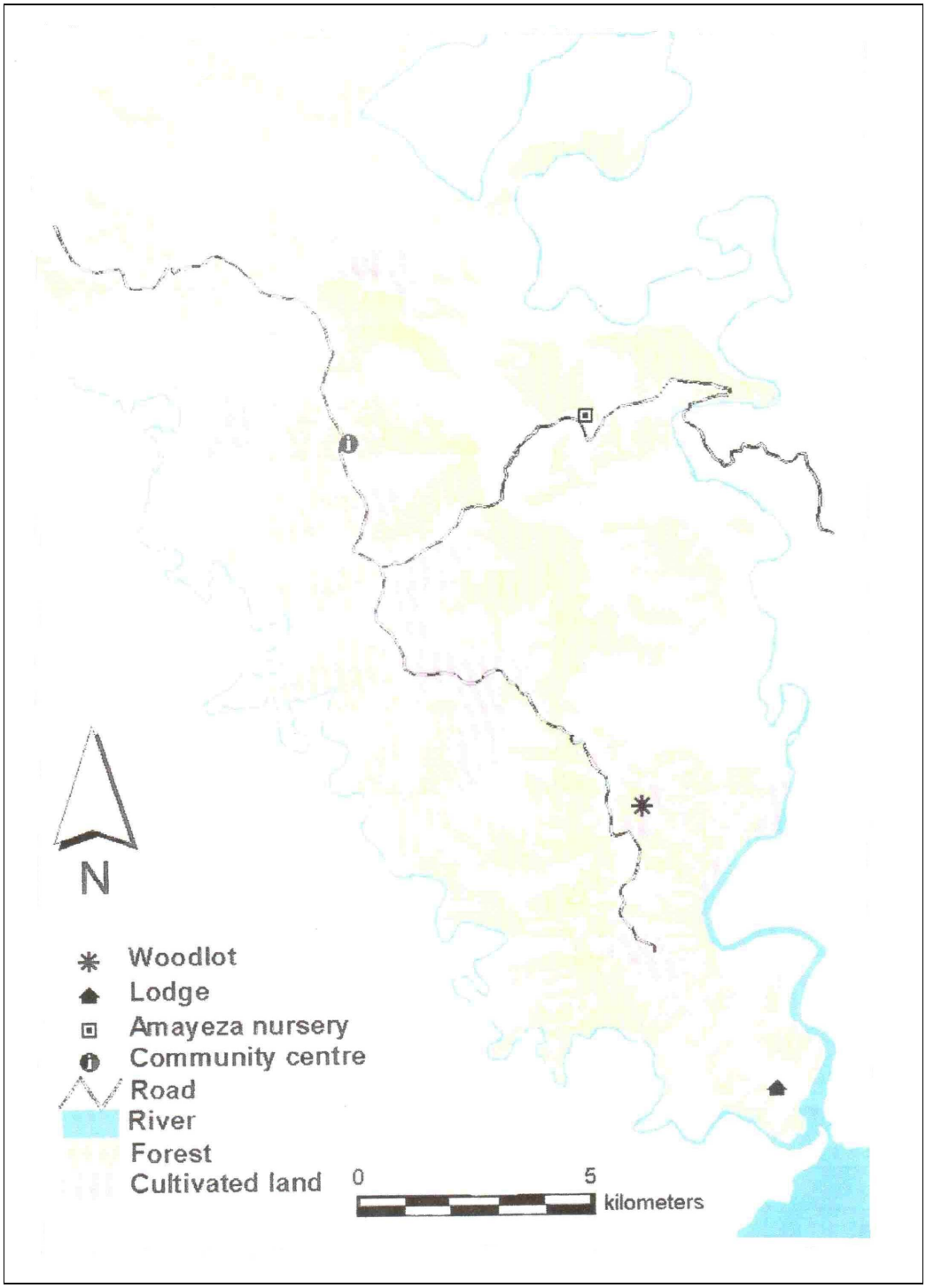
- *Construction of a low environmental impact eco-tourism lodge*. Although the community has made a great effort to erect structures for this purpose on their own, they have also resolved to enter into a partnership agreement through the lease of lands to private investors for construction of standardized and low-impact eco-tourism lodges within the community. If this aim is achieved, it would serve a means by which the community generates substantial income

from the conservation of their biological resources; and this, further, would serve an encouraging factor for the community to keenly protect their biodiversity species against unsustainable uses and depletion.

- *Establishment of a conservancy in the name of Participatory Forest Management*. There has not been any seriously progressive action up till moment to bring this to reality apart from the community forestry management plan that was drafted under the guidance of an advisor. However, there would be considerable improvement in the quantity and quality of the biological resources conserved within the community if this management plan is further fine-tuned and implemented.
- *Development of both medicinal plants and vegetable nurseries*. Both nurseries have been established and, in fact, batches of vegetable seedlings were reported to have been sold out on occasions. This initiative has stimulated the community towards jealously protecting the reservoir of medicinal plants in their various forest sites against outsiders (non-inhabitants of the Nqabara AA) and also from unsustainable harvesting by the insiders (inhabitants of the Nqabara AA), due to its income-generating characteristic.
- *Establishment of a multipurpose centre for arts and crafts production which has been completed.* This multipurpose centre serves the show centre for the art and craft works produced from the various biological resources; and, also, as a meeting place for the Trust members on matters concerning the conservation initiative. In fact, the focused group discussion for this research work was conducted in the same venue. Furthermore, this centre has generated an understanding for the general community that much could be achieved from biodiversity conservation in terms of new market products, and an alternative or supporting means to livelihood through farming activities.
- *Training the trust members about conflict resolution and management.* This is perceived to be very vital to the success of the community conservation initiative according to this study. In fact, Napier *et al.* (2005) notes that training of the community about conflict management and reduced incidences of conflict is one of the benefits that any community conservation initiative could provide to its adopters. Furthermore, with this training, relationships between and within the various communities under the Nqabara AA have

been fostered, and more united decisions are now being taken on further issues regarding biodiversity conservation and also, non-biodiversity related matters.

Figure 4: Map of Nqabara AA showing the locations of the biodiversity related projects



The focus group indicated that funding supports for these projects were facilitated by the RuLiv and GTZ Transform who consulted with the Mbashe Local

Municipality (MLM) on behalf of the community for finances to execute the Medicinal Plants nursery. They also helped the community to approach the Department of Environmental Affairs and Tourism (DEAT) for the Conservancy, forest management and CBNRM preparatory works and for the development of the arts and crafts/ multipurpose centre. DEAT was also reported to have supported the community with grants towards alleviation of poverty and it also organized an awareness programme that sought to inform people of the importance of the forest resources and the unacceptability of unnecessarily destroying them.

In conclusion, the inclusion of external bodies in the conservation initiative at the Nqabara community could be judged very vital to the success achieved based on the different important contributions this study has reported of the external agencies. As well, the notion of incorporating the private sector in any community conservation is a condition that has gained supports from literatures. For example, it has been recommended by Reid *et al.* (2004) as one of the lessons to be learnt by South Africa in order to enhance its conservation and development objectives and goals for its Contractual National Parks.

5.5 What the Dwesa-Cwebe Area can learn from the experience in the Nqabara Administrative Area

From personal observations of the researcher and discussions with the Dwesa-Cwebe nature reserve, a lot of similarities exist between the Nqabara AA and the Dwesa-Cwebe community in terms of the demographical characteristics (such as, education level, income level, occupation, birth rate, death rate, average family size and sex ratio) and the natural environmental resources and conditions (such as, forest, grassland, rivers and climate). In the light of all these and the results generated from the careful study of the Nqabara AA based on its biodiversity conservation programme, this study hypothesizes that the following conditions would be necessary to be put in place for the biodiversity conservation initiative proposed for the Dwesa/Cwebe area to be successful.

1. Ensure of harmony among the community as regards the election or selection of those that will constitute their Land Trust and represent their interest in development activities and initiatives.
2. Well laid down rules must be in place right before the institutionalization of the conservation initiative and must be put to implementation right from the inception of the programme.
3. Efficient information dissemination medium must be put in place right from the planning stage of the initiative.
4. Good conflict resolution structure must be placed on ground in case there is any possible misunderstanding in the community regarding the conservation programme.
5. The community leader should be empowered to administer permits for resource intake and accordingly measurable punishments for any violation.
6. Some of the community members, most especially those that are noted to regularly harvest the resources should be hired to serve as security guards in the sites where conservation are to be practiced.
7. The conservation agency – the Eastern Cape Parks- should endeavour to train the community adequately on relevant issues that will enable them efficiently carry out their conservation responsibilities.
8. The conservation agency should also help craft out alternative livelihood sources for the community which, essentially may depend on the biodiversity resources. This will alert the community so that they become more conscious as regards excessive harvesting and depletion of the resources.
9. The conservation agency also has to adequately represent the interest of the community and biodiversity resources when laws are being deliberated and enacted by the government.
10. The conservation agency needs to ensure that smooth relationship exists between itself and the Trust that represents the community so that efficiency conservation could be achieved.

5.6 Conclusion and Recommendations

The finding of this study concludes that without some basic conditions adequately ensured in any proposed site for community biodiversity conservation initiative, there is bound to be a failure. In the light of this study, the basic conditions include: (a) a major need for any community desiring to participate in biodiversity conservation due to possession of important biodiversity species on their lands, to understand the basic principles and demands of engaging in conservation, and ensure that there are alternative sources of livelihood to the generality or majority of its inhabitants; (b) seeking partnerships of communities with reliable and relevant external institutions and assistance in the form of finance, community training, coordination, regular evaluation, and adequate representation in the decision-making processes at the government level; and (c) necessity of having a common interest and goal by a community on the issue of adopting biodiversity conservative initiative and to what extent it is to be adopted. As well, reliable members should be appointed as their Trust Board members who will be charged with the responsibility of directing the affairs of the conservation initiative on behalf of the general community and representing their best interests with the government and other concerned external institutions

Finally, this study recommends that any areas proposed for community biodiversity conservation initiative is measured against the above-identified factors for success to be achieved. In addition, this study calls for further research to determine the level of correlation of the factors identified in this work to the success achievable by any community biodiversity conservation exercise.

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APPENDICES

Figure 5: Focus group interview schedule at the Nqabara AA

i. Who is the owner of the land wherein there is biodiversity?

ii. Who is entitled to using the natural resources on the land?

iii. What is the extent of clarity of use rights for the natural resources?

iv. What is the form of the benefits for the land owners and how is harvesting measured?

v. What is the responsibility of the conservation authorities in the co-management initiative?

vi. What is the responsibility of the landowners in the co-management initiative?

vii. Was there any form of training to the community at the inception of the PFM initiative?

viii. Are there good relations between the landowners and the conservation authorities?

ix. Is there any joint management board on ground?

x. Does the community consider the joint management board legitimate?

xi. Are the landowner representatives in the joint management board truly representing the interest of the landowners? How often do they meet with the community?

xii. Are there non-governmental and donor support for the co-management process?

xiii. Are there good conflict resolution mechanisms on ground?

xiv. Do you consider this PFM initiative a success?

xv. What criteria did you use in measuring its success?

xvi. Are there violators of the set rules for the PFM initiative?

xvii. What is the stake of the traditional rulers in the PFM initiative?

xviii. Do the members of the Trust belong to any local organisations?