

INTEGRATING CONSERVATION AND DEVELOPMENT

A STUDY OF KWAJOBE

by

FONDA FRANCES LEWIS

Submitted in partial fulfillment of the academic
requirements for the degree of
Master of Environment and Development
in the
School of Environment and Development
University of Natal

Pietermaritzburg

1997

ABSTRACT

Low levels of development, increasing levels of environmental degradation and poverty are features which characterise many rural areas in the Developing World. The socio-economies of these rural communities are primarily founded on the direct utilization of the natural resource base. The challenge faced by rural communities is thus to achieve socio-economic growth and stability in conjunction with environmental conservation and stability. Integrated conservation and development projects (ICDPs) have been applied in underdeveloped areas with the objective of enhancing biodiversity conservation through approaches which attempt to address the needs, constraints and opportunities faced by the rural communities. While successes have been recorded, critical analyses by researchers have found that few projects have met their objectives.

This case study in KwaJobe, KwaZulu-Natal, attempts to ascertain the development priorities as identified by the community. The participatory rural appraisal techniques utilized in this study provide a valuable approach for local people to provide information to outsiders, as well as to analyse their own circumstances with reference to natural resource management. The findings of the study indicate that the community is characteristic of many rural communities in underdeveloped areas. The development priorities identified by the community focus on economic and social welfare needs. The presentation of two natural resource based development models, ie, a resource based tourism development and an irrigation development, were used to interpret the development preferences and priorities of the community. From this it was possible to ascertain that the communities development priorities do not include natural resource management or environmental conservation. Development initiatives which rank these criteria as the primary objective do not induce support from the community. Approaches to rural development thus need to focus primarily on the meeting of community identified needs if they are to be accepted and supported by the community.

Methods need to be devised to facilitate sustainable development which offer opportunities for environmental conservation, rather than attempting to achieve development via conservation initiatives. There is thus a need for a change in the focus of ICDPs from using conservation initiatives to facilitate rural community development, to a focus which prioritises meeting the

development needs identified by the communities. Attempts can then be made to facilitate environmental conservation by means of integrated development and conservation projects (IDCPs).

DECLARATION

The research described in this dissertation was carried out through the School of Environment and Development, University of Natal, Pietermaritzburg, from August 1996 to January 1997, under the supervision of Professor Charles Breen and Dr Peter Goodman.

These studies represent original work by the author and have not otherwise been submitted in any form for any degree or diploma to any University. Where use has been made of the work of others it is duly acknowledged in the text.

Fonda Lewis

TABLE OF CONTENTS

Abstract	i
Declaration	iii
List of Figures	v
Acknowledgements	vi
 Chapter 1. Introduction	 1
 Chapter 2. Study Approach	 4
2.1. Introduction	4
2.2. Research methodology	4
 Chapter 3. Integrated Conservation Development Projects: Their role in development	 8
3.1. The problem	8
3.2. Definition of ICDPs	10
3.3. Roles	12
3.4. Successes and failures	14
 Chapter 4. The KwaJobe Case Study	 20
4.1. Study area and historical context	20
4.2. The people	22
4.3. The natural resource base	23
4.4. Relationship with neighbouring landowners	28
4.5. Opportunities for development	29
4.5.1. Resource based tourism	29
4.5.2. Agriculture	30
4.5.3. Integrated land use development	33
 Chapter 5. Analysis of the options	 34
5.1. Resource based tourism model	34
5.1.1. The economics of the tourism model	40
5.1.2. An analysis of the model in terms of ICDP principles	43
5.2. Agricultural development model	46
5.2.1 The economics of the agriculture model	48
5.2.2. An analysis of the model in terms of ICDP principles	49
5.3. Integrated resource use development	51
5.4. Community responses and social acceptability of the models	52
 Chapter 6. Discussion and Conclusion	 60
 References	 65

LIST OF FIGURES

Figure 1: Location of the study area	21
Figure 2: The study area	25
Figure 3: Scenic riverine forest occurring on the banks of the Mkuzi River	27
Figure 4: Ceswane Pan, one of a number of freshwater pans occurring in KwaJobe	27
Figure 5: Bananas grown around a homestead as part of the subsistence agriculture	32
Figure 6: A herd of Nguni cattle which form an important part of the local socio-economy	32
Figure 7: Freshwater pans provide attractive sites for the potential development of a resource based tourism lodge	36
Figure 8: Riverine forest along the Mkuzi River provides attractive scenery for the siting of a resource based tourism development.	36
Figure 9: Creemers' conceptual business model for community based ecotourism development	37
Figure 10: A conceptual framework showing the interrelationships between factors influencing the perceptions the people of KwaJobe have of development and conservation.	61

ACKNOWLEDGEMENTS

This study could not have been undertaken without the assistance and active participation of the Jobe people. The assistance and guidance of Mr Qwabe and Miss Simelane were of particular importance in facilitating the study. The direction and guidance of Professor Charles Breen have made the completion of the research project and production of this dissertation possible. Dr Peter Goodman was instrumental in the formulation of the study and also provided valuable guidance and comment throughout the study. The assistance of Mrs Jenny Mander, Mr Geert Creemers and Mr Peter John Massyn was also key to the production of this dissertation. The School of Environment and Development provided a valuable platform from which to carry out this study, and the role of Dr Duncan Reavey is greatly appreciated.

The financial assistance of the Natal Parks Board, Research and Community Development Fund (University of Natal), and the Centre for Science Development (HSRC, South Africa), and administrative assistance of the Institute of Natural Resources was also vital for the undertaking of this study. The opinions expressed and the conclusions arrived at are those of the author and are not necessarily to be attributed to the flinders of this study.

CHAPTER 1

INTRODUCTION

Most rural underdeveloped areas throughout the Developing World are marked by environmental instability which is continually being fuelled by social and economic instability (Goodland, 1995). There are thus three fundamental issues which need to be addressed by the process of sustainable development (Goodland, 1995):

- the promotion of a stable social system
- the development of a stable economic system
- the development of a stable environmental system

All three of these factors are interlinked and re-enforce each other, and a disturbance to one has repercussions on the other two. Sustainable development therefore needs to integrate social, environmental and economic sustainability (Goodland, 1995). Rural development initiatives need to evaluate and address both the implicit and underlying factors shaping current rural environmental conditions, and devise holistic and integrated development opportunities to facilitate sustainable development in these areas.

Rural areas throughout southern Africa, as in most developing countries, are marked with escalating levels of environmental degradation and poverty and have economies founded on unsustainable land use practices (ZAI, 1994). A dependence by rural communities on unsustainable land use practices in order to meet nutritional and economic needs is reducing the sustainability of the natural resource base (Goodland, 1995). Wynne and Lyne (1995) report that as the demands of expanding rural communities grow, so too will the levels of utilization of the natural resource base. These issues have led to the realization that a number of factors need to be addressed if sustainable development is to be achieved in rural areas. Firstly, the intersection of the goals between environmental conservation¹ and development particular to each case must be identified and used as the foundation for development. Secondly, short term socio-economic incentives must be provided to the community to facilitate

¹ Conservation is defined as the process of management of living resources, which ensures that utilization is sustainable while safeguarding the ecological processes and genetic diversity essential for the maintenance of the resources concerned (IUCN, 1980).

a transition in land use activities. Thirdly, development must be founded on community empowerment and local participation in decision making and management of development initiatives. In this way development projects may harness the support of the community and could facilitate community capacity building which will enable the community to have greater control over its future. The concept of integrated conservation and development projects (ICDPs) was developed from these issues. The principles of these projects are the incorporation of social, political, economic and environmental factors to facilitate sustainable development and environmental conservation in rural areas.

A community needs to understand the implications and outcomes of development options before it is in the position to play an active role in the design and implementation of an integrated conservation and development project. Once an understanding is created within the community of the potential value of the natural resource base, resource use planning can be initiated to allocate resources to the most sustainable and productive uses. Initiatives need to be developed whereby communities can benefit from abundant resources while protecting scarce resources. Secondly they need to minimize and regulate resource use activities which impact negatively on the sustainability of the resource base. A reallocation and mobilization of resources can then be brought about to facilitate the development of sustainable resource use activities which could lead to socio-economic development within the community.

It is thus necessary to find ways to initiate sustainable development which results in a reversal of current trends in environmental degradation and rural poverty. A case study of a rural community in an underdeveloped region (KwaJobe) was used to investigate conditions, attitudes and challenges faced by these communities. The findings could thus be interpreted to facilitate the formulation of methods to initiate sustainable development and environmental management in underdeveloped rural areas. The objectives of this study were to:

- investigate a community's response to development, conservation and resource use issues
- evaluate the potential for the integration of conservation and development in a rural community
- consider issues influencing and directing the community's responses to the various development options

- analyse the application of ICDPs in the context of the needs and constraints challenging rural communities in their quest for development
- examine the factors influencing communities development priorities and decision making criteria regarding resource use options and preferences
- identify approaches which need to be taken for the sustainable integration of conservation and development in underdeveloped rural areas.

It is the hypothesis of this study that the prevailing socio-economy in underdeveloped rural communities leads to the trend of resource management directed primarily at the meeting of economic and social needs of the community, and do not consider issues of environmental conservation. Development priorities of the community focus on economic opportunities such as jobs and schools, or social needs such as clinics and creches, in attempting to alleviate hardships and shortages. Issues such as sustainable resource use and environmental conservation are not included in communities development priorities. It is further the hypothesis that the community is unwilling to suspend its current land use activities due to the dependance on these activities to meet daily survival needs. Methods therefore need to be found whereby the application of projects which attempt to integrate conservation and development in ways which are acceptable and meet the needs of the community.

CHAPTER 2

STUDY APPROACH

2.1. INTRODUCTION

The Ubombo-Ingwavuma region is characterised by a natural resource base with development potential which is to date underutilised (Vandeverre *et al.* 1989). Local communities, such as the Jobe community, are striving to escape from poverty, and are searching for ways to generate socio-economic and infrastructural development. However levels of environmental degradation are continuously eroding the productivity and sustainability of the natural resource base (ZAI, 1989).

This study focuses on the community of KwaJobe, situated in the north eastern region of KwaZulu-Natal in the Ubombo District. The study area is made up of the Tribal Reserve number 13, as proclaimed by Act 27 of 1913 (Vandeverre *et al.* 1989) and in terms of this act the KwaJobe Tribal Authority has jurisdiction in all areas within this Reserve. The community is considered to be representative of many rural communities, and faces development issues faced by most communities in underdeveloped countries. While the study focuses on only one community, the issues addressed in this study could be applicable to development challenges faced by many underdeveloped rural communities.

2.2. RESEARCH METHODOLOGY

Field research was undertaken using participatory rural appraisal (PRA) techniques as described by Nabasa *et al.* (1995). Participatory research can typically be defined as a process centred on the principle that multiple perspectives are sought through group enquiry, and using systematic methods, help people to bring about changes to problem situations that are seen as improvements (IIED, 1994). These methods can be used for local people to inform outsiders, and for people's own analysis of their conditions. One of the objectives of PRA is to enable communities to identify their priorities for development and to control this action (MIDNET, 1994). PRA provides insight into qualitative data not otherwise obtainable through quantitative techniques (Chambers, 1983). The use of PRA as a research technique has been widely accepted by researchers (Chambers, 1983; IIED, 1994; MIDNET, 1994; Nabasa *et al.*, 1995).

and has been extensively applied and shown to be useful in community approaches to resource management and development (Armitage and Garcha, 1995; Chambers, 1983; IIED, 1994; Mason and Danso, 1995). Semi-structured interviews were incorporated into the PRA methodology during this study in order to give additional insight into quantitative aspects of the research.

The study approach attempts to draw on the community's knowledge of its circumstances and the natural resource base, and to match the resource availability with development options thereby creating an awareness among the community of the potential for sustainable resource based development. Interviews with the community and role players were used as a primary method for accessing information. Interviews were conducted both formally and informally¹. Semi-structured² interviews were conducted by means of pre-arranged meetings with specifically identified groups within the community. Semi-structured interviews were also carried out on site visits during chance meetings with groups and individuals. Key informant³ discussions were conducted with individuals who were directly involved with activities such as crop cultivation and pastoralism, as well as those settled in areas with potential for tourism development such as around pans. Discussions included prepared questions as well as opportunistic questioning around issues arising from the discussion.

An introduction to the community was initiated through Mr Ndlovu, a member of the KwaJobe Development Committee, who represents the Jobe people in the Southern Maputoland Biosphere initiative. Mr Ndlovu then introduced the researcher to Mr Qwabe, also a member of the KwaJobe Development Committee, who presented the researcher to the Tribal Authority

¹ Formal interviews were conducted at prearranged meetings held with target groups. Informal interviews involved questioning during opportunistic meetings with people willing to interrupt their current activities.

² Semi-structured interviews are based on a list of points or topics which have been identified for discussion. They involved few leading or closed questions (requiring yes or no answers) and are rather based on open ended questions where the interview takes the form of a discussion, with informants encouraged to discuss issues freely.

³ Key informants were individuals who were identified as having direct involvement or responsibility for issues addressed in this project. This included resource use decision making, farming and development committees.

in order to gain approval for the research project to be conducted in KwaJobe. Mr Qwabe was appointed by the Tribal Authority to act as a facilitator for this study. Miss Simelane was appointed to act as interpreter and field guide. Groups and individuals from the community to be interviewed were identified with the assistance of Mr Qwabe, who then arranged a time and venue for the meetings to take place. Field research was carried out between 1st August and 12th December 1996. Fifteen prearranged meetings were held with community groups in KwaJobe, while a number of additional opportunistic meetings were held with other community members or groups, before and after these meetings and during site visits. The size of the groups at the meetings varied from small groups of five to a meeting with the organisational and development committees attended by 42 people.

A number of target groups were focussed on during this study. Target groups included :

- Tribal Authority and community leaders (Acting *Inkosi* and *Izinduna*)
- Key informants with direct involvement in the area
- Focus groups, including teachers, development committees, women's groups, and farmers groups
- Interviews with willing and interested individuals

Meetings were held throughout the *Induna* areas in KwaJobe, and were not confined to areas immediately neighbouring on Mkuzi Game Reserve, or in areas identified as potentially suitable for the development of tourism facilities. A conscious effort was made to ensure that interviewees were drawn from both gender groups. This was of particular relevance as in many of the families the men are migrant workers and the women are therefore responsible for the farming and land use activities in the area. Interviews were conducted with individual *Indimas* as well as the collective Tribal Authority. The Tribal Authority fills a key decision making role within the community, in particular with regards to land use and development, and was therefore regarded as an important source of information regarding the acceptability or lack there offer development proposals.

The information obtained by means of the PRA approach are understood to be reflective and indicative of the perceptions and views of the KwaJobe community regarding land use, conservation and development. This information was interpreted by comparison with people-

environment and environment-development trends found in other underdeveloped communities, and the findings of integrated conservation and development projects. Conclusions were then drawn from these comparisons regarding the communities opinions and ambitions with regard to resource use management and development.

Meetings were held with the Natal Parks Board Regional Ecologist for Northern Zululand and Conservator of the Mkuzi Game Reserve to investigate community relations and the potential for co-operative developments with the Jobe community. Natal Parks Board community relations policy document was referred to, to determine the official neighbour relations policy of the organisation and how it would affect the potential for resource based development in KwaJobe. Planning staff of Natal Parks Board also provided valuable information on tourism market in the KwaJobe area and community based tourism development models. This information was combined with market and financial information regarding the potential for a resource based tourism development in KwaJobe obtained from Massyn (1996) of Ecopartnerships Africa, which is an organisation involved in the development of community based ecotourism ventures. The station manager of the Makatini Research Station, and the staff of the Department of Agriculture at Cedara were consulted on issues regarding agricultural policy and the agricultural potential in the Jobe ward.

The information derived from these organisations was related to the information obtained from the community. In this way an attempt was made to identify conflicts and similarities between community needs and development potential within the natural resource base of KwaJobe. The issues of furthering environmental conservation in the process of meeting the community's development needs were also investigated.

CHAPTER 3

INTEGRATED CONSERVATION AND DEVELOPMENT PROJECTS: THEIR ROLE IN DEVELOPMENT

3.1. THE PROBLEM

The conservation of biodiversity can best be achieved by the conservation of habitats (McNeely *et al.*, 1990) and these conservation efforts have primarily concentrated on the establishment and management of protected areas (Wells, Brandon and Hannah, 1992). While these protected areas have long been relied upon for the conservation of biological diversity the increasing pressure of growing populations, which commonly leads to conflicts between authorities and local communities, has highlighted their vulnerability for continued existence as well as for achieving their conservation objectives (Cumming, 1990). Furthermore unsustainable land use practices adjoining protected areas commonly leads to encroachment and destructive effects within the protected areas (Wells, Brandon and Hannah, 1992). Recognition has grown that successful biodiversity conservation and protected area management ultimately depends amongst other things on support and co-operation from local communities (Anderson and Grove, 1987).

Of equal concern is the continuing deterioration of the environment outside of the protected areas, and the escalating levels of poverty in rural areas (Kiss, 1990). The natural resource base makes an important contribution to the economy of rural households and the increase in population pressure has resulted in a simultaneous expansion of natural resource exploitation (Kiss, 1990). These communities cannot however afford to discontinue exploitative resource use practices in the interests of ecological conservation alone (Infield, 1988). Infield (1988), in a case study in KwaZulu-Natal, found that while more respondents from a rural community strongly supported the conservation of wildlife than those who rejected it, the economic constraints on them are too powerful and wildlife and natural resources are destroyed out of the necessity for survival. He found that affluence strongly influenced attitudes about conservation, which indicated that impoverished communities or individuals do not have the leeway to support the practice of conservation, even if they support the concept. Therefore only by the creation of rural wealth can the pressure on the natural resource base be reduced.

A range of social, cultural, political, economic and local organisational factors pertaining to rural communities needs to be addressed if a successful solution to these threats to the environment and protected areas is to be found. Issues relevant to addressing these factors include (Brown and Wyckoff-Baird, 1992):

- existing land use practices by local communities
- population size, structure, trends, and socio-economic differentiation within the community
- beliefs, attitudes, values and perceptions regarding wildlife and other natural resources
- »• institutional capabilities for local groups to assume new roles in resource management
- local institutional structures
- international, national and provincial level conservation and development policies
- gender considerations focusing on the traditional role women play in society, especially when considering that women in rural communities are both managers and users of the natural resource base through their daily activities

Brown and Wyckoff-Baird (1992) identified that economic and social benefits are key factors influencing local community decision making and actions regarding conservation and resource use issues. Developments therefore need to address the economic as well as social needs of the community, if they are to promote viable alternative resource use practices acceptable to the community. Development initiatives promoting environmental conservation and sustainable land use practices must thus provide economically viable, socially acceptable as well as ecological sustainability development options to rural communities.

Interaction and co-operation between local communities and protected area managers is vital to ensure the development of land use plans that satisfy the needs of all stakeholders and role players (Brown and Wyckoff-Baird, 1992). There needs to be a shift away from "*essentially militaristic defence strategies*" of protected area management which almost always heightens conflict between conservation authorities and local communities (Wells, Brandon and Hannah, 1992). There also needs to be a breakdown of the mistrust between protected area authorities and local communities (Newmark *et al.* 1993). Protected area authorities and conservationists need to win the support and include the participation of local communities in management and planning processes if conservation is to be successful in the long term. Furthermore local

communities need to develop and adopt sustainable resource use practices which are integrated with all local land uses if sustainable development is to be facilitated.

The challenge is therefore to develop strategies and projects which integrate the resource use activities of local communities with protected areas in order to achieve environmental stability and biodiversity conservation. These strategies need to include the development of self-sustaining and economically viable development projects in community areas, and the development of policies and activities within protected area which are socially accepted and supported by the local community. Strategies for achieving the implementation of conservation practices in underdeveloped rural areas therefore need to be founded on an integrated and co-operative relationship between local communities and protected area management.

3.2. DEFINITION OF INTEGRATED CONSERVATION AND DEVELOPMENT PROJECTS

Wells, Brandon and Hannah (1992) report an increase in the number of projects attempting to link biodiversity conservation with social and economic development of local communities. These projects are generally referred to as integrated conservation and development projects (ICDPs). Wells and Brandon (1993) define ICDPs as:

"projects ranging from small and simple initiatives on shoestring budgets to projects with large and complex rural development components". While "the common element of all ICDPs is the objective of enhancing biodiversity conservation through approaches which attempt to address the needs, constraints and opportunities of local people."

Wells, Brandon and Hannah (1992) further define ICDPs to include:

"activities in buffer zones, biosphere reserves, small-scale rural development projects on park boundaries, and protected areas included in regional development plans".

Smaller projects have included multiple-use conservation areas, and initiatives on the boundaries of parks such as buffer zones. Larger projects involve biosphere reserves, regional land use plans which include protected area components and large scale development projects which have links to local protected areas (Wells and Brandon, 1993).

The framework of ICDPs is based on a number of principles which attempt to address the social, cultural, political, economic and local organisational factors characterising the unsustainable resource use patterns of rural communities. A fundamental principle of ICDPs is that by increasing the options for local communities to manage their resources for the benefit of current as well as future generations, better conservation of the resource base will occur (Brown and Wyckoff-Baird, 1992). In attempting to increase these options of management for benefits, integrated conservation and development projects are designed to include a development component to generate social and economic benefits. The objective of this component is to reduce economic hardship and thereby decrease the destructive utilization pressures on the natural resource base. Projects to promote improved natural resource management have two main objectives (Brown and Wyckoff-Baird, 1992):

- provide groups or communities with skills and resources needed to increase their incomes thereby enabling the protection of the natural resource base
- to encourage substitution of unsustainable land use systems with sustainable systems for the conservation of the resource base

Also included in the principles of ICDPs is participation of local communities and the incorporation of indigenous knowledge systems in the management of the resource base. Participation refers to the integration of local communities and resource users in the processes of decision making about design, implementation, and management of the ICDPs and resource use planning (Brown and Wyckoff-Baird, 1992; Wells, Brandon and Hannah, 1992). Local participation will promote development which is accepted by the community at large, and can thereby contribute to the success of sustainable development and resource management.

While ICDPs focus on development outside of protected areas, this development should not occur in isolation of the activities and policies within the protected area (Brown and Wyckoff-

Baird, 1992). The essence of ICDPs, for example such as buffer zone¹ management activities, is their potential ability to generate local community interest and support for protected areas and environmental conservation through the provision of economic and development benefits from protected areas and resource conservation (Makombe, 1994).

The legal recognition of community rights and proprietorship over natural resources is also a prerequisite of ICDPs. If a community is required to invest in managing a resource the community must be assured that it will not lose its access to this resource in the future (Steiner and Rihoy, 1995). Assured legal rights to resource use will not only facilitate community management of the resource, but will also provide entitlement to revenues generated from the projects (IIED, 1994). Issues of community ownership need to therefore include security of management rights and benefits (Steiner and Rihoy, 1995).

3.2. ROLES OF ICDPs

The role of ICDPs is to promote the development of sustainable land use practices and thereby enhance the conservation of biodiversity, by focussing on the social and economic needs of the communities. Furthermore ICDPs encourage a shift away from traditional approaches to protected area management towards increased emphasis on promoting the participation of local communities in resource conservation activities (Brown and Wyckoff-Baird, 1992). The primary role of ICDPs is therefore to provide local communities with economically, socially, as well as ecologically sound alternatives on which to base their development (Brown and Wyckoff-Baird, 1992). Murphree (1993) reported that:

"People seek to manage the environment when the benefits of management are seen to exceed the costs."

¹ Buffer zones are defined as "Areas adjacent to protected areas, on which land use is partially restricted to give an added layer of protection to the protected area itself while providing valued benefits to neighbouring rural communities". The objectives of these buffer zones are also defined as including restrictions on resource use or spacial development to enhance the conservation value of the area (Wells and Brandon, 1993).

Murphree's view is supported by Steiner and Rihoy (1995) who further state:

"These benefits must exceed the cost of managing the resource and must be secure over time "

Consideration must therefore be given to the opportunity cost borne by resource users of having to forgo current resource use practices. ICDPs need to provide alternative resource use options which are sustainable as well as more productive, either economically or materially, than resource uses currently practised by communities. When these alternatives are developed the transition to the new resource uses will be affordable to, and therefore enforced by the community. A common objective of these integrated conservation and development projects is thus the establishment of economic incentives for the conservation of the natural resource base (Brown and Wyckoff-Baird, 1992). An essential component in the design of ICDPs is therefore the identification of the linkages between conservation and development, that is, to identify where the conservation and economic development goals intersect and then to build on these common factors to develop projects from which the community can achieve sustainable development.

Institution building and achievement of local stewardship by communities over resource management is seen as a further role of ICDPs (Brown and Wyckoff-Baird, 1992). Murphree (1991) reported that community based development involving capacity and institution building can lead to effective resource management. Well organised community institutions have been shown to offer the most cost effective option for natural resource management when based on appropriate incentives and community inspired regulations and management (Makombe, 1994). Enabling local communities to manage the natural resource base sustainably through integrated development is also a fundamental element of the development process that can lead to people having control over their own future (Davion, 1995).

The development of an ICDP can provide a valuable tool for decision making and planning for long term sustainable land use by local communities. In practice there are however a number of challenges which have to be addressed before such a project can be implemented (Armitage, 1995):

- the realization by a community of why this is necessary
- the acceptance and understanding of the process by the community

The development of ICDPs will thus also need to incorporate environmental education. The role of education is to provide information which will equip resource users with an understanding and appreciation of issues regarding sustainable land use and conservation. Environmental education, and the provision of this information, is used to attempt to change local communities' attitudes about the value of the natural resource base and thereby bring about changes in their patterns of behaviour regarding resource use (Brown and Wyckoff-Baird, 1992). This education entails increasing the understanding of people at all levels of the objectives and potential benefits of wildlife conservation, and the importance of participation of the community in the effort. Education of community leaders and decision makers is also needed so that they will establish supportive policies to facilitate the support and co-operation of the community in the establishment of the conservation and development initiatives (Kiss, 1990). Conservation education will also involve increasing awareness of the value, both current and future, of natural resources together with education regarding the ecological processes that maintain these resources in the long term (Brown and Wyckoff-Baird, 1992).

3.3. SUCCESSES AND FAILURES

While many case studies have demonstrated the potential of integrated conservation and development projects for meeting their objectives (Wells, Brandon and Hannah, 1992; IIED, 1994; Kiss, 1990), practical implementation of such projects has resulted in a number of successes as well as failures. Wells and Brandon (1993) reported that many case studies reviewed were experiencing difficulties in meeting either their biodiversity conservation or social and economic development objectives. A review of studies (Kiss, 1990; Wells, Brandon and Hannah, 1992; Brown and Wyckoff-Baird, 1992; Wells and Brandon, 1993; IIED, 1994) showed that failures can be attributed to a number of factors including lack of participation of local communities in planning and implementation of the projects, non-economic viability of the projects, failure to secure local community ownership of the resources, and non-deliverance of short term, tangible benefits to the local communities.

Researchers such as Wells, Brandon and Hannah (1992) have found that most projects they reviewed have not adequately integrated intended project beneficiaries as active partners, but rather as passive recipients or implementors of plans designed by others. The Zimbabwean

Project WINDFALL had the objectives of reducing conflicts between rural populations and wildlife and protected area authorities, thereby reducing local population pressure on the protected area. The aim was to generate benefits for the local community from wildlife utilization in the protected area (IIED, 1994). The project initially resulted in a reduction of poaching in local protected areas, but this could not be maintained and poaching soon returned to former levels. Project failure was primarily attributed to the limited participation of the local community in the project, and the small benefits accrued to the people in the form of limited amounts of meat and a small proportion of the revenue earned by the protected areas (IIED, 1994). A primary principle of ICDPs, in contrast to the WINDFALL project, is the participation of all stakeholders and resource users resulting in ultimate stewardship of local resource management with local stakeholders (Brown and Wyckoff-Baird, 1992). Furthermore the benefits gained from co-operation with the project did not outweigh the costs of forgoing their poaching activities (IIED, 1994).

The CAMPFIRE Programme (Communal Areas Management Programme for Indigenous Resources), is often described as the best example of community-based resource management and development in Africa (IIED, 1994). CAMPFIRE is founded on the philosophy of sustainable rural development that enables rural people to manage and to benefit directly from indigenous wildlife. The basic principle of this programme is the empowerment of local communities with decision making and management of the resource base through providing them with access to, control over, and responsibility for the resource base. In combination with this, the programme is founded on the principle that local communities should receive tangible benefits from the utilization of natural resources. A critical analysis of the programme (IIED, 1994) reported that the programme is marked by successes and failures. Successes are reported to include:

- re-awakening appreciation of the value of wildlife by local communities
- the emergence of local communities' environmental management structures
- improved environmental conservation practices
- local sustainable land use planning
- increased household revenues
- funding for schools, clinics and other community infrastructures

The analysis (IIED, 1994) reported that a primary failure has been the unwillingness of governing councils to devolve real responsibility and power to local community structures to manage their own natural resources. The programme has therefore not become community driven, but rather remains dependent on outside input and control. It has been widely acknowledged that the introduction of controlled resource utilization is difficult if ownership and access rights have not been fully transferred to the local community and are not legally enforceable (IIED, 1994). Kiss (1990) states that it is these use rights that are essential in making the resource valuable to the community, and therefore worth protection. Furthermore, the full revenue generated from wildlife management has not been passed onto the local communities. The local communities have also remained passive recipients rather than active participants in the development programme.

Another cause of failure of a number of ICDPs has been the lack of economic sustainability of the projects. Dependence on outside funding makes the continuance of projects vulnerable as there is a threat of funding being discontinued or reduced. Brown and Wyckoff-Baird (1992) report on the failure of the water pipeline project at Amboseli National Park in Kenya. The Kenyan government promised social benefits to the Maasai from the establishment of the park which included a water pipeline system to an arid area outside the park, eliminating the need for the Maasai to enter the park with their cattle. Government funding cutbacks prevented necessary repairs to the pipeline resulting in a breakdown in the system, and a return of Maasai cattle to the park. Alternatively, the project could have attempted to integrate the development of social services with conservation, by financing the project with revenue generated from sustainable resource utilization within the park, such as tourism or hunting safaris. Instead these revenues went to central government, and the Maasai never received any share of it (IIED, 1994). Development initiatives need to rely largely on local resources rather than on external capital and resources. Cost sharing, as far as possible, with local communities increases their level of involvement and ownership (Brown and Wyckoff-Baird, 1992).

Brown and Wyckoff-Baird (1992) report that a level of success has been achieved in the Oku Mountain Forest Project in the Cameroon. The Oku Forest is reported to face high population pressure from adjacent areas as well as high levels of land and resource use within the forest itself. The Oku Mountain Forest Project attempts to develop new strategies for sustainable

resource use based on economic incentives and cultural ties with local inhabitants. To buffer the core area of the forest, the project promotes sustainable use projects at the edges of the forest. The key to the success of this project is reported to be the strategy of highlighting the economic benefits that local people derive from the forest. The local communities support and monitor the system because of the economic benefits of preserving the forest in the long term. Another factor contributing to the success of the project is that during the initial stages local community social structures and traditional village councils and rulers were integrally involved in preparing the management plan for the project. Studies by Murphree (1991) show that community institutions generally provide more effective resource management than centralized government or outside institutional management. However in many projects community institutions remain underutilised sources for project planning and resource management. Training to strengthen the organisational capability of local institutions is however critical to effect decentralized management and control of projects and resource use (Brown and Wyckoff-Baird, 1992). The Oku Mountain Forest Project also highlights the need for ICDPs to generate immediate, tangible benefits to the local communities (Brown and Wyckoff-Baird, 1992). Without the provision of short term substitutes for unsustainable resource use, continued exploitation often remains the only option for the resource users (Infield, 1988).

The failure of ICDPs also arises as a result of lack of understanding by communities of realities of sustainable development in terms of returns. Development projects often yield limited returns in the short term relative to the investment and to the number of people anticipating benefits, and may not compare to those of alternate utilization of resources (IIED, 1994). Substantial benefits may only be realised in the long term, however the projects may lose the support of the communities before these benefits can be generated.

In summary therefore, despite the growing interest in ICDPs in recent years, Wells and Brandon (1993) report that few projects have reached advanced stages or been completed, while many have been terminated. They report most common causes of failure in ICDPs to include:

- top-down approaches to project implementation and failure to achieve local community participation at all levels of planning, implementation and management of ICDPs
- inability to provide short term and long term, tangible benefits to local communities

- lack of sustainable improvement to the social or economic situation of local communities

ICDPs which have shown the greatest degrees of success tend to be characterised by the following features:

- matching the needs of the local communities with resource use options
- improving living standards of local communities via the generating benefits directly from resource utilization
- decentralising decision making structures, and involving community organisational structures in resource use planning and management
- production of sufficient revenues from resource utilization for the projects to be self-financing
- reduction of conflict between local people and protected area authorities and wildlife
- securing ownership and use rights of natural resources to local communities

There remains a need to develop a number of aspects of integrated conservation and development projects for these projects to achieve improved levels of success. ICDPs need to further focus on the process of decision making by the local community and stakeholders prior to the design and implementation phases. This process of choice and decision making by the community regarding the type, design and location of integrated conservation and development projects is an important precursor to the establishment of an ICDP. The involvement of the community at this fundamental level is an important aspect of community empowerment which may lead to communities sustainably managing the natural resource base.

"Empowerment is not the outcome of a single event, but rather a continuous process that enables people to understand, upgrade and use their capacity to better control and gain power over their own lives" (Schuftan, 1996).

The process of empowerment must therefore provide people with the opportunity for choice as well as the ability to choose.

The use of ICDPs as a tool for the provision of options and choices for development can be useful in aiding the development of long term visions for sustainable resource use by communities. The development of this vision building capacity within communities can develop the ability of communities to realise the potential value of the resource base and lead to long term planning for sustainable development. This form of community capacity building and empowerment is a process of enabling people to develop and implement sustainable ways to meet their own needs and to have an increased degree of control over their future. It is important to remember however that empowerment may not in itself lead to people necessarily sustainably managing their resources, however it can provide the opportunity for people to gain control and could enable them to make choices which may improve their socio-economic circumstances.

The implementation of an ICDP will require the formulation of a project which is specific to the social, cultural, economic and natural resource characteristics of each community and area. The preliminary stages of ICDPs is thus an investigation of these issues. The process should be community based and should take full advantage of indigenous knowledge systems, community needs and ambitions, and history of current land use practices and patterns. The incorporation of these issues, either as strengths or restrictions to development, will need to form the foundation of any community driven resource based development project.

CHAPTER 4

THE KWAJOBE CASE STUDY

4.1. STUDY AREA AND HISTORICAL CONTEXT

The study area of the Jobe ward (KwaJobe) is located in the north eastern region of KwaZulu-Natal, and falls within the Ubombo magisterial district (Figure 1). To the west of the study area lies the Ubombo Mountains, the area to the east of which is generally referred to as the Maputaland coastal plain, and extends to the Indian Ocean (Mander and Quinn, 1995). To the north of KwaJobe is the Pongolo Floodplain and State Land (Mander and Quinn, 1995). This is a unique natural ecosystem to South Africa, which includes an intricate combination of natural biota, human settlement and agriculture (Heeg and Breen, 1982). The southern, western and eastern boundaries of the Jobe ward border on the extensive conservation area of the Greater St Lucia Wetland Park which is controlled by the Natal Parks Board. This Wetland Park includes Mkuzi Game Reserve to the west and south of KwaJobe, separated by the Mkuze river, and the Sodwana State Forest to the east which is separated from KwaJobe by the Muzi Pan (Figure 1). The region as a whole is reported to have exceptional natural resources of national importance, the potential of which has yet to be realized (Vandeverre *et.al.* 1989).

Research by Cubbin (1993) shows early hunters to the area, including W.C.Baldwin, R.Struthers and C.Selous, reported the area to "abound with game" including species such as elephant, hippopotamus, buffalo, rhino, nyala and impala. Malaria has always been a danger in this region, while other diseases such as rinderpest, East Coast fever and nagana (sleeping sickness) have contributed to relatively low population densities of both humans and domesticated stock in the past. The Mkuzi Game Reserve was proclaimed in 1912 (Cubbin, 1993). Vaughan-Kirby, the first Game Conservator appointed to the reserve, reported the area to be "practically uninhabited" (Cubbin, 1993). The proclamation of the reserve did however result in the relocation of a number of people with homesteads within the to areas outside of the proclaimed boundaries (Goodman, 1990). This together with the proclamation and zonation of State Land in the region, had a number of effects on settlement patterns and the socio-economy of the area (Mander and Quinn, 1995).

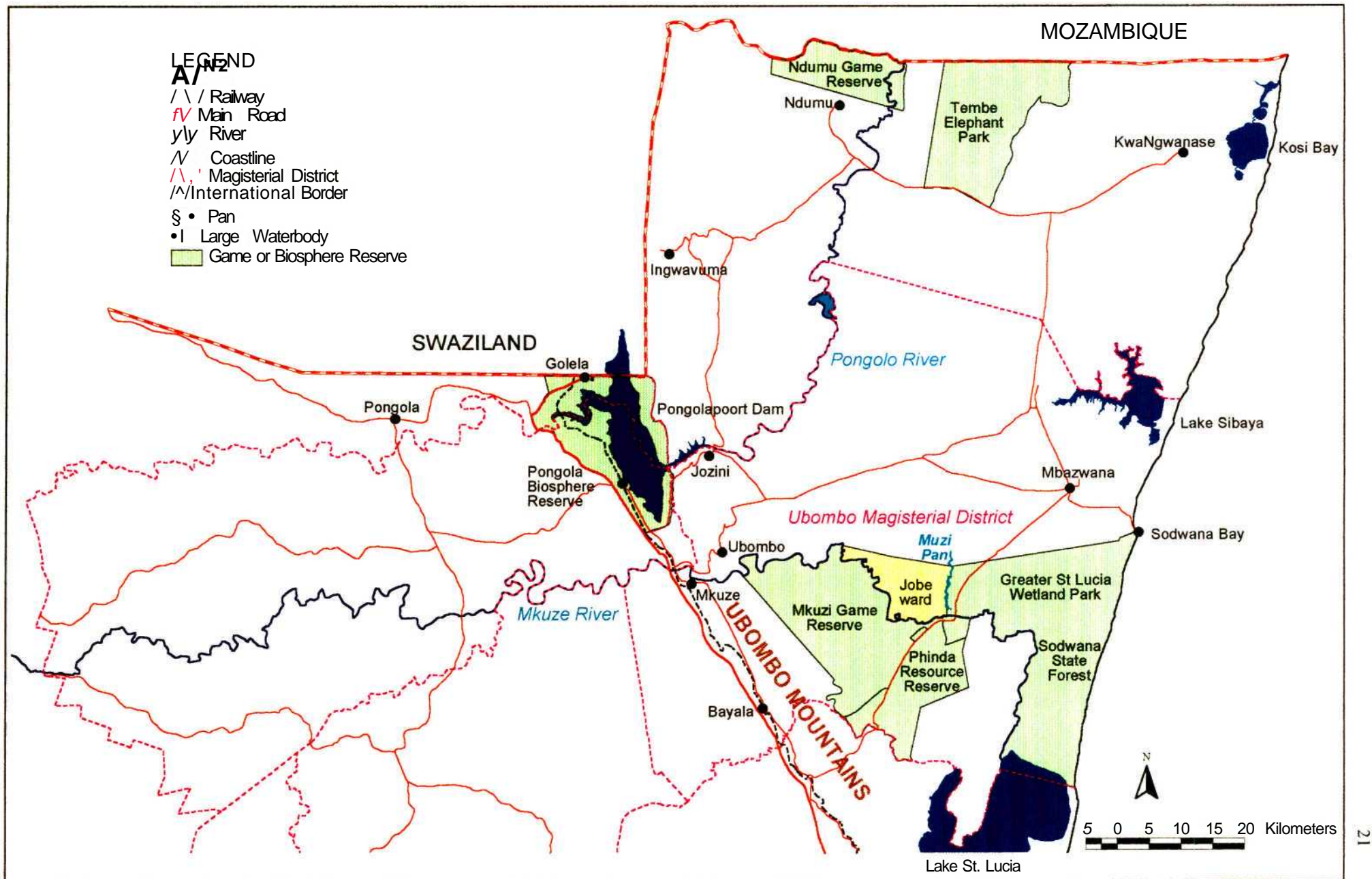


Figure 1: Location of the study area

4.2. THE PEOPLE

The 1991 population census (HSRC, n.d.) estimated the population of the Jobe ward to be 7309 people. The Jobe ward is an area of 100 km², and given the 1991 population estimate, the population density in KwaJobe is 73 people per km². The population growth rate is estimated to be 2.3 %, with a doubling in the population size in the next 30 years (Vandeverre *et al.* 1989). The results of a social survey of the Ubombo-Ingwavuma Region in KwaZulu-Natal by Vandeverre, Apsey, Robinson and Associates (1989) showed the migrancy levels of this area are considered low when compared with other regions in South Africa with 14 % of the population, predominantly males, absent. High unemployment levels in the formal employment sector also characterise the region. Vandeverre *et al.* (1989) recorded unemployment levels of 35 % in males and 85 % in females in the Ubombo-Ingwavuma Region. Levels of formal education are low with only 28 % of the adult population found to be functionally literate (Vandeverre *et al.* 1989).

The Jobe ward (KwaJobe) is administered by the KwaJobe Tribal Authority. The ward is headed by the *Inkhosi*, who is supported by a council of seven *Izinduna*, or headmen, each of whom oversees a part of the ward. The Tribal Authority has substantial administrative responsibilities including local road maintenance, school construction, screening of development applications, allocation of land rights and law and order (Mander and Quinn, 1995). Vandeverre *et al.* (1989) found the level of local community organisation in KwaJobe to be well developed with 67 % of households having at least one family member belonging to an organisation or committee, such as farmers committees, dipping committees, school committees, and woman's groups. Structures for the participation of local people in decision making have been in place in the region for some time in the form of the tribal and regional authorities. However these structures have become decreasingly effective in achieving a participatory process for decision making. Vandeverre *et al.* (1989) reported that decision making and development actions are increasingly becoming top-down with control often vested in people who are not necessarily accountable to the local people. This has strong implications on the planning of participatory development projects such as ICDPs. Existing community structures cannot be taken for granted to be representative of the community, and project planning and implementation therefore should not be solely based on existing organisational structures.

Agriculture is the predominant economic activity for the majority of the households, however they are defined as deficit farmers since production levels do not constantly meet the households nutritional needs (Vandeverre *et al.* 1989). Most households are heavily dependent on external sources of income, either from migrant remittance or pensions (Vandeverre *et al.*, 1989). Cattle also play an important part of the local socio-economy, but the people of this region are found to be primarily agriculturalist and not pastoralists.

An analysis of the socio-economic status of the KwaJobe community thus indicates that it is characterised by:

- high levels of unemployment
- low levels of adult literacy and formal education
- high dependancy on financial remittance from migrant workers
- high population densities

Furthermore, the highly variable climate makes dryland agricultural production highly variable and crop production for nutritional needs is unreliable. The population is thus highly vulnerable in terms of poverty and malnutrition. These factors lead to an environment in which one can anticipate that people's perspectives are shaped by these persistent shortages. This can be related strongly to people's prioritization of economic and welfare needs, which are seen to outweigh the need for sustainable resource use.

4.3. THE NATURAL RESOURCE BASE

The study area falls within the Mkuze Floodplain and Muzi Sandforest areas as described by Vandeverre *et.al.*, (1989). Phillips (1973) classifies the area in which KwaJobe is situated as Bioclimatic Regions 10a and 10b. These Bioclimatic Regions are defined as mild sub-arid and arid riverine lowland, mixed scrub and wooded savannah. The mean annual rainfall ranges from 650 - 750 mm (Vandeverre *et al.* 1989), the rainfall is erratic, with heavy downpours frequently followed by long dry periods (Ogg, 1995). The topography is low lying with very gentle slopes. The soils are predominantly brown clayey, poorly drained sands (Vandeverre *et.al.* 1989).

The main water resources of the area are the Mkuze river and Muzi Pan (Figure 2). The stored water in the nearby Pongolapoort Dam (Figure 1), with a capacity of $2500 \times 10^6 \text{ m}^3$, is also a potential water source for development in the KwaJobe area (Ogg, 1995). There are also a number of smaller fresh water pans including Muzi Pan (Vandeverre *et al.* 1989).

According to Phillips (1973), the production capacity of annual subsistence crops in these areas is low in quality and quantity, due to dry spells which occur during the rainy season. This together with extremely high evaporation levels (October to March average evaporation of 1379 mm) makes dryland agriculture in this area very risky (Ogg, 1995). A study by Buchan (1988) on the Pongolo Floodplain found that the most significant land use of the area is subsistence agriculture with most households undertaking cropping activities. Most families locate fields in both dryland and floodplain areas in an attempt to minimise total crop failure either as a result of drought or flooding. These findings appear to be similar to those for KwaJobe, which is located south of the Pongolo Floodplain and which is characterised by similar socio-economic conditions. According to Vandeverre *et al.* (1989), as a result of increasing population pressure, a number of areas unsuited for agriculture are being used for cropping activities which is resulting in escalating levels of environmental degradation.

Cattle ownership was a high risk activity in the region until 20 - 25 years ago, but after the control or eradication of diseases such as rinderpest, nagana and foot-and-mouth, cattle have become increasingly important to the local people of this region especially as draught animals (Buchan, 1988). Ogg (1995) found that cattle ownership was on average five per household. The carrying capacity, calculated by the Department of Agriculture, for cattle in KwaZulu-Natal on average is 2.7 ha per cattle unit (cu) (Vandeverre *et al.* 1989). However this ratio increases to 5 ha/cu in the Ubombo-Ingwavuma Region. This does not compare favourably with other areas in KwaZulu-Natal such as Ndwedwe and Umbumbulu which are considered favourable for cattle production having carrying capacities calculated at 2 ha/cu (Vandeverre *et al.* 1989). Pressure in the form of overstocking and overgrazing is leading to additional environmental pressure and erosion of the soil in the region (Vandeverre *et al.* 1989).

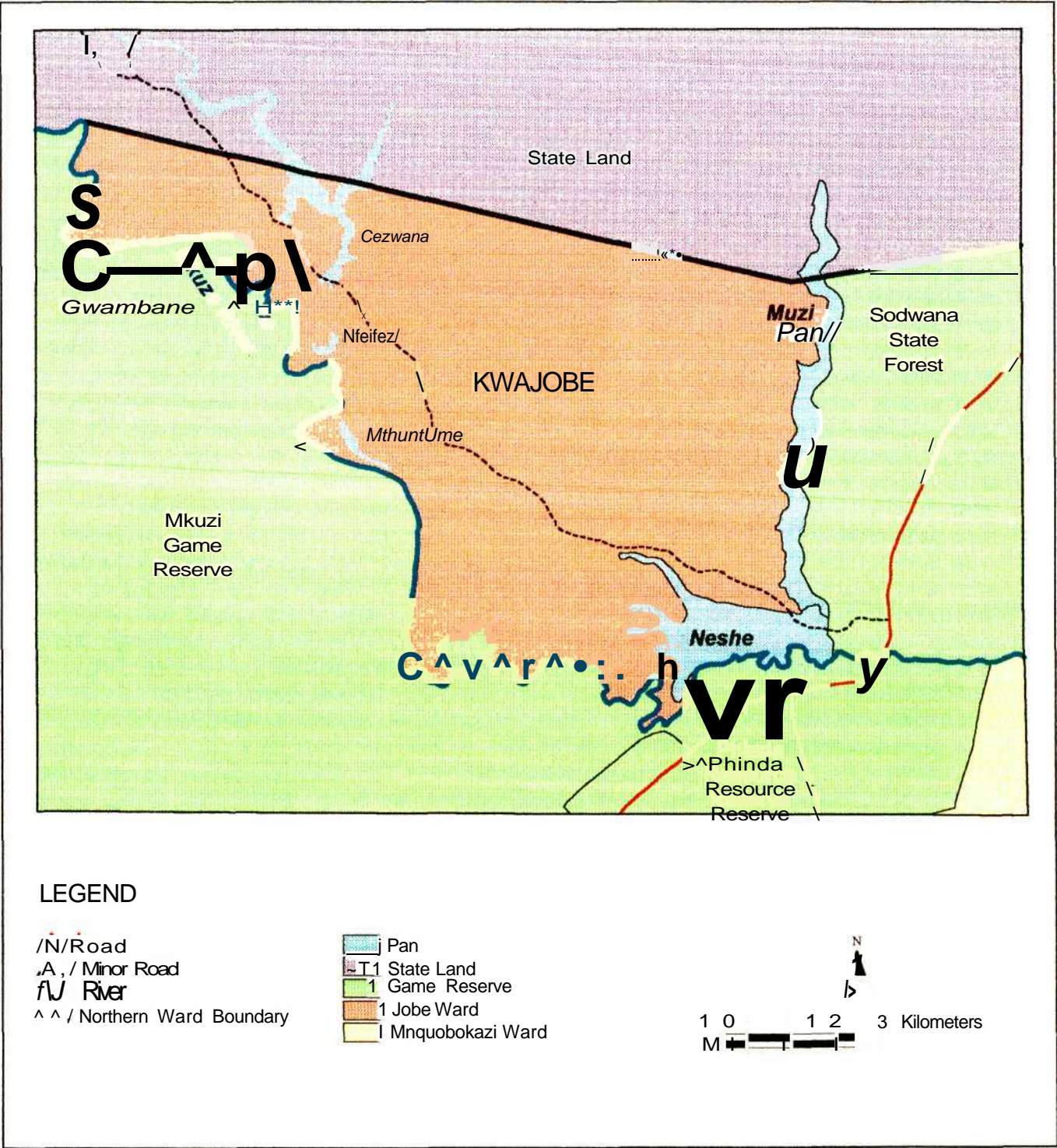


Figure 2: The study area

A number of ecologically valuable and aesthetically attractive natural features occur within KwaJobe. The riverine forest on the banks of the Mkuze river (Figure 3) is reported to be the rarest forest community in KwaZulu-Natal (Goodman, 1987), while the Muzi, Ceswane, Mthundane and Ntelezi Pans form an attractive system of freshwater pans (Figure 4). There is also an extensive area of Sandforest in the western region of KwaJobe. This area is marked by low population and livestock density, as water scarcity and sandy soils limit settlement as well as agricultural potential in the Sandforest (Vandeverre *et al.* 1989). An important issue regarding the Sandforest is the high degree of endemism in the tree and shrub component. Distribution of the Sandforest is limited to the drainage area to the west of the Muzi Pan (Vandeverre *et al.* 1989).

A number of small floodplains occur adjacent to the Mkuze river. Small pockets of riverine forest still occur on these floodplains, however extensive stretches have been removed for use as fuel wood and to develop fields for cropping. These fields are valued by the community as they are close to a source of water which allows limited irrigation during dry periods. However, the removal of this riverine forest has contributed to the destabilization of the river banks, and the river has changed course in some of these places resulting in the flooding of the fields. These floodplains are also extensively used for winter grazing as they are a valuable source of green grass for livestock in the dry winter months.

It has been widely agreed that the sustainable development potential of the resource base is currently underutilised within KwaJobe (Vandeverre *et al.* 1989; ZAI, 1994, Creemers, 1996). Sustainable resource based development has the potential for generating income and employment which could contribute to socio-economic development for the local community. The initiation of this development requires the realization by the community of the potential and value of the resource base. It will also require a change to a number of current land use patterns to facilitate the reallocation of resources upon which to base the sustainable development.



Figure 3: Scenic riverine forest occurring on the banks of the Mkuze river.



Figure 4: Ceswane Pan, one of a number of freshwater pans occurring in KwaJobe.

4.4. RELATIONSHIP WITH NEIGHBOURING LANDOWNERS

Control and responsibility for conservation and protected areas throughout southern Africa has in the past been primarily vested with provincial or central government organisations, and in many instances the community-level institutions which managed natural resources have become weakened (Jones, 1995). The alienation of local people by conservation authorities from protected areas has been reinforced by the differences between the social and economic situation inside and outside the reserves (Venter *et.al.* n.d). While protected areas frequently represent active economic centres, neighbouring communities commonly have low income generation and economies founded on unsustainable agricultural practices (Venter *et al.* n.d). The KwaJobe people can be seen as an example of this scenario. As a result of the history of the forced relocation of homesteads for the establishment of Mkuzi Game Reserve in 1912 (Goodman, 1990), there still remain many negative associations with conservation and the authorities of the Mkuzi Game Reserve among the KwaJobe people (Goodman, *pers.comm*, 1996¹). This antagonistic relationships between the KwaJobe people and NPB staff has been exacerbated by the past militaristic law enforcement and exclusionary management policies.

The proclamation of the Mkuzi Game Reserve states that the reserve boundary extends to the floodline on the northern bank of the Mkuze river as defined by the Surveyor General (Natal Nature Conservation Ordinance, Provincial notice no. 23 of 1912). This boundary has however never been fenced or marked. The community has extensively utilized the floodplains and river bank below the 100 year flood line on the Mkuze river, particularly as they offer valuable winter grazing for livestock as well as cropping potential. However this use is reported to have resulted in a reduction of riverine forest and woodland, an increase in the rate of erosion and destabilization of the river bank, and the invasion of alien plants to the area (Goodman, 1987). Goodman (*pers.comm*, 1996) reported that on a number of occasions the reserve staff have attempted to enforce the boundary, either by demarcation with beacons or with proposals for a fence. These attempts have been met with strong resistance from the Jobe people, who maintain that the boundary runs on the southern bank of the river, and that they are entitled to utilize this land. This disagreement has contributed to the conflict and an antagonistic relationship between the Natal Parks Board and the Jobe people.

¹ Dr P.Goodman, Mkuzi Game Reserve, Natal Parks Board.

Discussion with the KwaJobe people further revealed that the community also disputes the boundary of the Mkuzi Game Reserve in the Gwambane area. Ancestral graves of the KwaJobe people are located in the Gwambane area (Goodman, 1992) and the community is firm in its belief that this is rightly the land of KwaJobe. Discussion with the members of the community, including the local *Induna*, Mr Manzi, revealed that the community would like the area to be fenced off from the rest of the Mkuzi Game Reserve and that the community should then have free access to the wildlife resources in this area. These factors have also contributed to an antagonistic and untrusting association between the KwaJobe people, its leaders, and the NPB.

In recent times the Natal Parks Board (NPB) neighbour relations policy (Natal Parks Board, 1992) has promoted the implementation of development projects between the Mkuzi Game Reserve and the KwaJobe people. These include the development of a curio store situated in the Gwambane area within the Mkuzi Game Reserve and run by members of the KwaJobe people. A second project involved the development of a water provision scheme from the Mkuze river to a point within the Jobe ward (Goodman, *pers.comm*, 1996). Results from enquiries made during this project revealed that a level of trust and co-operation has developed between the KwaJobe people and the conservation authorities of Mkuzi Game Reserve. Members of the Tribal Authority reported that they recognised the authorities of the game reserve as a valuable source of information regarding potential developments, as well as a potential source of aid for the establishment of development projects. However the land claim in the Gwambane area proposed by the community remains an important issue in the relationship.

4.5. OPPORTUNITIES FOR DEVELOPMENT

4.5.1. Resource based tourism

Two types of resource use development potential have been focussed on in the Jobe ward, intensive agriculture and tourism development (Vandeverre *et.al.*, 1994; ZAI, 1994; Ogg, 1995). Vandeverre *et al.* (1989) report that the area has considerable potential for resource based tourism, which could provide an important contribution to the short and long term economy of KwaJobe, and which is to date underutilised. The

report identifies two zones within the Jobe ward which are particularly suitable for the development of resource based tourism, firstly the banks of the Mkuze river, and secondly the banks of the Muzi Pan (Figure 2). These areas are reported to be of conservation value as well as offer scenic features. For example, the riverine forest and Sandforest are of significant biodiversity value, while the freshwater pans are aesthetically attractive features. Furthermore, their location along the boundaries of extensive conservation areas increases the potential of integrating developments in these areas with activities in the protected areas, by means of, for example, initiating the development of ICDPs. The integration of conservation and tourism development in the Jobe ward offers the opportunity to optimize the sustainable utilization of the natural resource potential.

4.5.2. Agriculture

While subsistence agriculture² is currently the predominant agricultural practice in the area (Figure 5), potential exists for the development of extensive commercial irrigation schemes (Ogg, 1995). This development potential is facilitated by the availability of water quotas for irrigation purposes from the Pongolapoort Dam (Ogg, 1995). A number of areas within KwaJobe have soils suitable for the development of irrigation agriculture (Vandeverre *et al.* 1989). Crops such as sugar cane, cotton, maize, beans and tomatoes were identified as suitable for the development of commercial irrigation farming in KwaJobe (Ogg, 1995).

Vandeverre *et al.* (1989) report that there is also the potential for developing the livestock enterprises in the area. The main livestock enterprise is the production of Nguni cattle (Figure 6), and there is the potential to increase herd profits with the introduction of stud breeding. Production levels could also be improved with a decrease in the stocking rates and the improvement of the genetic stock of the herds.

The agricultural productivity of the area could further be maximised by the integration

² Subsistence agriculture in this study is defined as production levels which on average only produce enough to meet household consumption needs. In years of good rainfall farmers in KwaJobe have been found to produce a small surplus which can then be traded or sold, however in dry years production levels are often not enough to meet household needs, while drought may result in total crop failure (Ogg, 1995)

of the different agricultural enterprises. For example the integration of cropping with livestock production by means of increasing edible crop residues which could be utilized as fodder for livestock (Vandeverre *et al* 1989). This could increase the levels of production as well as facilitating the sustainable utilization of the resource base.

Development plans should not only consider the natural resource base, but also take account of the socio-economic factors (Vandeverre *et al.* 1989). For example, concern was expressed by a number of members of the community during this research project regarding the undesirability of the relocation of homesteads for facilitating the development of intensive irrigation agriculture.

Research by Taylor (Vandeverre *et al*, 1989) and Ogg (1995) identified a number of constraints currently affecting the potential for agricultural development in this area:

- difficulties and high costs associated with the procurement of fertilizers and implements in the area
- poorly developed infrastructure
- lack of markets except for small local markets which are easily oversupplied
- shortage of water for irrigation

The main issues needing to be addressed for the development of agricultural potential in KwaJobe therefore include (Vandeverre *et al*, 1989):

- provision of local farmers with improved access to markets
- increase agricultural extension and advisory services
- secure financing and credit systems
- improve road infrastructure
- improve control of debilitating crop and livestock diseases
- provision of skills training
- water provision



Figure 5: Bananas grown around a homestead, as part of the subsistence agriculture.



Figure 6: A herd of Nguni cattle which form an important part of the local socio-economy.

4.5.3. Integrated land use development

Intensive agriculture and resource based tourism may represent conflicting land uses in some cases, however their development need not be mutually exclusive. The development of commercial agriculture and resource based tourism could be integrated in the Jobe ward by means of the development of an integrated land use plan for KwaJobe and its surrounds. The integration of conservation and development could create an awareness of the development potential of the natural resource base, and could also generate an understanding among the KwaJobe people of the ecological and conservation importance of the Mkuzi Game Reserve, and the role it could play in development within KwaJobe.

The matching of land capability with sustainable land utilization therefore needs to integrate ecological and socio-economic elements of society (Armitage, 1995). This means that in the ideal situation both ecological and social considerations should form the basic framework for land use planning and decision making. In the case of this study in the Jobe ward, consideration must be given to the community's stated preference for agricultural development. Further consideration must also be given to the underutilised potential for development of this area in the form of resource based tourism. The formulation of potential development options should therefore include both community preferences as well as ecologically and economically viable options not identified by the community. The identification of these new options can then be used as a tool for the development of sustainable resource use upon which the economy of the Jobe ward could be founded. Furthermore these options can form the basis of an integrated land use plan for the benefit of the development of the region as a whole.

CHAPTER 5

ANALYSING THE OPTIONS

5.1. RESOURCE BASED TOURISM MODEL

Resource based tourism is considered to be a development option which is complementary to environmental conservation and which, if carried out correctly, can promote the sustainable utilization of the natural resource base and lead to local economic development (ZAI, 1994). A study by Vandeverre *et al* (1989) reported that the Ubombo-Ingwavuma region has a large unrealised potential for resource based tourism. A number of attractive natural landscapes occur within KwaJobe which provide potential sites for the development of tourist lodges. These include freshwater pans and swamps (Figure 7) which provide habitats for numerous species of birds and game, while dense patches of riverine forest occur along the banks of the Mkuze river (Figure 8). In addition to this, an extensive area of land is already dedicated to conservation in the immediately neighbouring Mkuzi Game Reserve and the Sodwana State Forest, which form part of the Greater St Lucia Wetland Park (Figure 1). There exists therefore in KwaJobe the opportunity to integrate a relatively small area of land with one of the neighbouring protected areas, thereby creating the potential for a resource based tourism enterprise. Current Natal Parks Board policy (Natal Parks Board, 1992) confirms a willingness to incorporate such a development into the reserve management plan, with the provision of opportunities for the integration of community wildlife resources with protected areas.

The recent political changes in South Africa have facilitated the re-entry of the country into the global tourism market and the South African Tourism Board expects foreign visitors to South Africa to increase from 3.6 million in 1995 to 9 million by the year 2000 (Mander and Creemers, 1995). KwaJobe falls into a region which already attracts a significant proportion of the tourists to KwaZulu-Natal (ZAI, 1994). A study of the tourism market in the Mkuzi Game Reserve by Creemers (1997) reported that the demand for tourist accommodation in this area is far greater than the facilities available. There is thus scope for the expansion of tourism facilities in the area, particularly with regards the middle to high cost accommodation. The potential therefore exists for the community of KwaJobe to capture a section of this market by means of the development of a tourist destination on the boundary of the Mkuzi Game Reserve.

In this way the community could generate income and employment, as well as other development opportunities which could to socio-economic development within the Jobe ward.

Ashley and Garland (1994) identify four potential types of community resource based tourism:

- development run entirely by outside entrepreneurs with no community involvement
- development of an enterprise that voluntarily shares profits with local people
- an enterprise established through joint venture and partnership between developer and local people
- a venture run entirely by the local people

Each of these options offer different levels of profit distribution, empowerment and capacity building within the community. A primary principle of integrated conservation and development projects, of which a resource based tourism development can form a part, is the facilitation of community empowerment and capacity building in conjunction with economic development (Wells, Brandon and Hannah, 1992). Therefore the first two development options described by Ashley and Garland (1994) (ie development run entirely by entrepreneurs or one based on profit sharing alone) do not represent true ICDPs as they do not offer many opportunities for community ownership of the resource utilization enterprises. In contrast they may result in a dependency by the community on the developers in terms of income generation. Ventures owned and run by the local people, either independently or as a joint venture project, have the greatest potential to facilitate the sustainable management of the resource base by the community (Wells and Brandon, 1993).

Nkonka Bird and Hunting Safaris are currently negotiating a lease of hunting and photographic safari rights on Muzi Pan from the Jobe people. The transaction involves the direct payment of the lease fee to the community and represents a development run entirely by entrepreneurs with no community involvement, as described by Ashley and Garland (1994). The development may therefore result in direct income to the community from resource utilization but as envisaged, includes no aspects of community empowerment or participation in its development and operation.



Figure 7: Freshwater pans provide attractive sites for the potential development of a resource based tourism lodge.

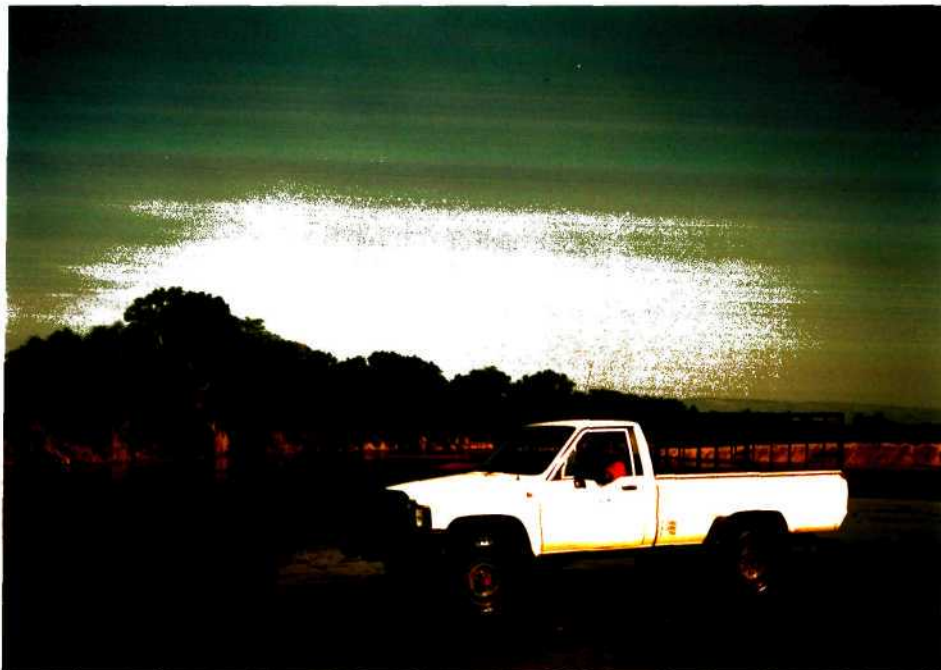


Figure 8: Riverine forest along the Mkuze river provides attractive scenery for the siting of a resource based tourism development

A joint venture model for community based ecotourism described by Creemers (1996), proposes the development of a joint venture tourism enterprise between a community partner and a private sector partner, in collaboration with a protected area agency (eg Natal Parks Board), donor agency, implementing agency and development funding institution (Figure 9). The objective of the project described in the model is to facilitate the development and operation of a tourist lodge and conservation area in a community area adjoining a protected area. The aim of the development is to facilitate empowerment and capacity building within the community, while contributing to sustainable resource use and conservation in the region. The model proposes that an area of community land be set aside for a conservation area and tourist lodge. A tourism operating company is established, in which the community partner and private sector partner each have a 50 % share, to manage and operate the tourism enterprise.

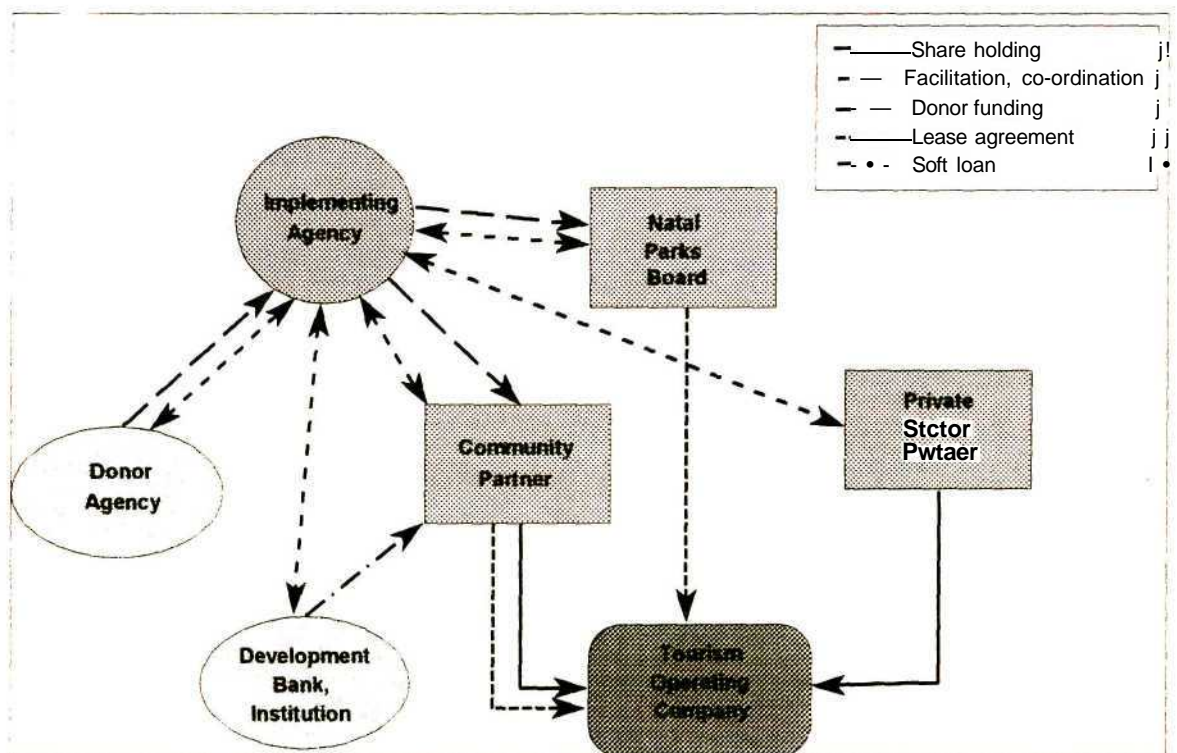


Figure 9: Creemers' (1996) conceptual business model for community based ecotourism development.

In the context of this model, Creemers (1996) describes the private sector partner to be a partner who has proven commitment to the development of profitable resource based operations, which are environmentally sustainable and which create substantial community

benefits. The functions of the private sector partner in the partnership include:

- the provision of tourism management and development expertise
- the provision of tourism marketing expertise
- contribute to the credibility of the company
- provision of capital investment
- provision of *in situ* training for involved community members

The community partner should comprise a structure which represents the interests of all members of the community. While the staff of this organisation should be drawn directly from the community, some locally based external experts may be required to set up the operation initially. The functions of this partner include (Creemers, 1996):

- the management of the community interests in the tourism company
- disburse funds generated by the tourism enterprise to development projects
- recruitment of community input into the development (eg labour and handicraft)

Creemers (1996) proposes that the implementing agency should represent a non-profit partner in the development. It should have knowledge of local conditions and sensitivities, and a proven record of facilitation and development processes. The implementing agency should also have the support of all partners. The functions of the implementing agency are:

- to facilitate the establishment of the partnership
- identify interested donors and development institutions
- resolve differences and promote trust and commitment between the partners.

The function of the conservation agency in the partnership are to (Creemers, 1996):

- provide general support to the partnership, in that way contribute to the credibility of the tourism operating company
- provide advice to the partnership on ecological management and rehabilitation of community land, where necessary
- provide access to the marketing network of the conservation agency
- provide free advice to the tourism operating company on local tourism product development
- provide access to the protected area (state land) under negotiated conditions

- provide game to stock community land if required
- provide advice and support during early stages before funding has been secured
- manage community land
- ensure ecological sustainability of the tourism operation's use of the protected area, and
- use internal resources to provide legal advice

The involvement of a development institution such as a development bank incorporates business expertise into the project. The role of the development institution is to provide advice on business matters as well as financing for the project at favourable rates and flexible repayments (Creemers, 1996).

The final component of the model is the donor agency. This agency is required to provide donor funding for the project (Creemers, 1996). This funding is required for:

- the development of the partnership:
 - 0 covering costs of implementing agency
 - 0 to fund community capacity building programme
 - 0 to fund training programmes
- capital development:
 - 0 cover part of tourism lodge development costs
 - 0 cover part of infrastructure costs (eg. rerouting fence, roads)

A key concept of the model is the incorporation of the community at the top of the management and development structures and not simply as a token partner or limited beneficiary. The financial, administrative and operational management will draw on the management structure established by the Jobe community at the conception of the project, as well as the expertise of the private sector partners. The model is also constructed to have a policy of employment from within the Jobe community, which will be supported by a training and capacity building programme which will be implemented to benefit members of the local community. This training and capacity building programme includes the training of local community members in managerial and technical posts, such as nature conservation, administration and management, with the enrolment of a number of candidates at tertiary training centres. The model proposes that financial support required to fund these

developments within the community are sourced from donor agencies such as the German Agency for Technical Cooperation and the European Union (Creemers, 1996).

Creemers (1996) states that the use of community land for conservation and ecotourism development has a number of advantages:

- it creates a source of income to the community through the lease fees paid for the use of the land
- it creates a stronger sense of involvement and ownership for the community with the knowledge that their land is playing a crucial role in the success of the business
- it enlarges the effective size of the protected area and buffers the protected area from environmental impacts arising from land use in adjacent areas

5.1.1. The economics of the resource based tourism model

An economic model proposed by Massyn (1996), which applies the development model described by Creemers (1996) (Figure 3), identifies the potential for the development of a 24 bed luxury tourist lodge within the Jobe ward. A study carried out by Massyn (1996) has evaluated the economic viability of this proposal, with the potential to generate economic profits for both shareholders. A number of suitable sites have been identified for the potential development of a tourist lodge in KwaJobe. These include areas in the vicinity of the Mthundane Pan and Neshe Pan (Figure 2).

The enterprise is largely dependent on the negotiation of access rights to the surrounding Natal Parks Board controlled areas, as this would then give tourists to the tourist development in KwaJobe access to extensive conservation areas and associated game viewing opportunities. The model then proposes that the access rights would be leased from the NPB in the form of non-exclusive access rights to the reserve by tourists resident in the tourist lodge developed in KwaJobe. This access lease is reported to not only increase the viability of the proposed lodge as a result of access to extensive game viewing and wilderness areas, but would also generate income for the NPB (Table 3).

The development of the economic model for the proposed KwaJobe tourist lodge is based on a number of assumptions as listed in Table 1 (Massyn, 1996).

Table 1: Assumptions for projects of comparative returns from the potential tourist lodge development in KwaJobe (Year 1 - Year 5 calculated at 1996 Rand (R) values).

ASSUMPTIONS	YEAR1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Average annual bed occupancy (%)	35	45	60	70	75
Number of beds	24	24	24	24	24
Capital investment (R)	1,750 000	0	0	0	0
Bednight price (excl. VAT) (R)	608	608	608	608	608
Bednights sold per annum	3 062	3 936	5 246	6 121	6 557

The repayment of the loans used to fund the initial development will be dependent on the agreement negotiated with the development institution. It is proposed that support from the development institution be extended in the form of favourable interest rates with flexible repayment conditions (Creemers, 1996).

Based on these assumptions the potential financial returns for the tourist lodge were calculated for the first five years of establishment and operation as listed in Table 2 (Massyn, 1996). The gross income and net profit is the revenue generated by the enterprise in total before allocation of revenue to individual shareholders. This income would be accrued to the tourism operating company established by the community and private investors, from which dividends would then be paid.

Table 2: Projections of financial returns from the potential KwaJobe resource based tourist development (Year 1 to Year 5) (Massyn, 1996).

FINANCIAL RETURNS	YEAR1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Gross income (excl. VAT) (R)	2,056 434	2,635 535	3,510 786	4,021 448	4,379 437
Net profit before tax (R)	107 761	355 858	804 949	1,005 362	1,222 194

The potential economic returns, projected over five years, generated by shareholders and investment groups is listed in Table 3. The total direct income accrued to the community partner will include the lease paid by the tourism operating company for the land used for the development, the wages, as well as the community's share of the profits as a result of its 50 % share in the tourism operating company. The benefits accrued to the NPB include the entrance fee paid on entrance to the Mkuzi Game Reserve from the KwaJobe tourist lodge, and the access rights lease fee as negotiated between the tourism operating company and the NPB. The benefits to the private investors would arise from the profits generated from their 50 % share in the tourism operating company.

Table 3: Projections of economic returns from the potential KwaJobe resource based tourist development accrued to various stakeholders (Year 1 to Year 5) (Massyn, 1996).

ECONOMIC RETURNS	YEAR1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Community benefits					
Profit share	53 881	177 929	402 475	502 681	611 097
Lease fee for community land	63 754	77 653	98 659	110991	119 506
Total direct income to community partner ¹	117 635	255 582	501 134	613 672	703 603
NPB benefits					
Entrance fees	76 560	98 400	131 160	153 024	163 920
Access rights lease fee	95 632	116 497	147 988	166 487	179 260
Private investor benefits					
Profit share (before tax)	53 881	177 929	402 474	502 681	611 097
Other indicators					
Primary job creation	28	30	32	33	35
Estimate of secondary job creation	42	45	48	50	53
Total wage bill	507 600	549 600	566 400	626 400	628 800

¹ Total direct income includes profit share and lease fee paid to community for use of community land for development.

A number of indirect benefits would also be accrued to the community. These would include secondary job and industry creation. Secondary job creation would include employment opportunities in the form of taxi operators, private tour guide operators, an curio sales, as well as a range of service provisions.

5.1.2. Analysis of the model in the context of ICDP principles

Creemers' (1996) model provides a useful way to construct a platform from which the economic calculations of a resource based tourism development could be calculated. The model however has a number of weaknesses when applied in the context of an ICDP. The principles of an ICDP primarily focus on the facilitation of community empowerment and capacity building in conjunction with self-sustaining economic development. The model largely proposes subsidy of training and capacity building projects, and covering costs of implementing agencies by donor agencies. While external funding for the project is vital, the free provision of these donations may increase levels of dependency in the community. Erskine (1996) reports that a central element to community development is empowering and enabling people, rather than directing and controlling them by perpetuating their dependence on handouts. While efforts should be made to procure funding from donor agencies at favourable interest rates or with soft repayment conditions to finance the development, these should not be in the form of pure donations. The model needs to incorporate ways in which these costs could be recouped. The funds procured for these capacity building programmes could be repaid either to the donor agency or used for reinvestment in other development projects either in KwaJobe or other areas. Furthermore the basis for repayment of these funds could also increase the chances of securing funding as opposed to donations, from donor agencies, and thus increase the chances of raising the funds needed to establish the capacity building projects.

While the model does incorporate facets of community capacity building and empowerment through the training of personnel to operate and manage the tourism operation (vertical integration), the positions are limited to those directly involved in the development project. They may therefore not benefit the extended community. Additional extension training programmes should be incorporated into the model to

facilitate horizontal integration, ie generation of additional employment activities indirectly linked to the tourism and lodge operation such as waste management, garages, supply of vegetables, poultry and curios to the lodge. Programmes such as these could contribute to the development project having a wider impact on the level of development and empowerment within the community. This could assist in generating a sense of community ownership and involvement within a far greater part of the community, than if the training and empowerment programmes were confined to those directly involved in the project.

Creemers' (1996) model proposes the tourism operating company pay a lease fee for non-exclusive access rights to parts of the protected area, over and above the daily entrance fee paid by tourists wanting access to the protected area. In terms of the definition of successful ICDPs it may be questioned whether the tourism operating company, with the local community as a 50 % partner, should have to pay for the access rights to the protected area for the operation of the tourism enterprise. The provision of direct benefits from the protected area to the local community, such regulated free access rights, is reported to contribute to a sense of involvement and ownership in the protected area by the local community (Wells and Brandon, 1993). This may encourage improved support and co-operation by the local community for the activities and objectives of the protected area.

The model described by Creemers (1996) proposes the involvement of an implementing agency in the role of establishing the partnership, promoting trust between development partners and identifying potential donors and development institutions. However these functions could better be undertaken by development facilitators who are contracted directly to the tourism operating company. In this way the facilitators can be contracted for specific issues when they are required thus resulting in a better chance for specialists to be involved for each specific issue.

The economic returns projected by Massyn (1996) are based on a number of fundamental assumptions. The viability of these projections for a tourism development in a community area are dependent on the validity and accuracy of the assumptions.

No indication is given of the anticipated repayments on the loan for the initial development, or the impact these repayments will have on the profitability or economic viability of the development. In addition, no substantiation is provided for the anticipated occupancy levels projected over the first five years. Consideration will also have to be given to the economic success of the project should these occupancy levels not be attained. The projections are also based on an assumed concession area size of community land and an agreed lease rate. The share of the community revenue upon which these rates are founded is a substantial portion of the community profit however there is no evidence that these statistics would be viable in practical implementation of the development. The five year economic projections calculated by Massyn (1996) may thus be viewed as optimistic as there is no practical evidence to substantiate these projections. The implications of lower profit margins must be considered when considering the viability of the project and its ability to fulfill its objectives of sustained economic development.

While many of the benefits and advantages of this development which are identified in Creemers' (1996) model are described as perceived by the conservation agency, there are a number of additional advantages and benefits in terms of ICDP principles. A key concept defined in the model (Creemers, 1996) is the participative role of the community at the top of the development and management structures of the project. The community partner is not merely a token partner or passive beneficiary, which is described as a the cause failure in many ICDPs (IIED, 1994). The process defined by Creemers' model also presents the opportunity for the transfer of skill to the community which could contribute to long term capacity building within the community.

The model also facilitates the establishment of a collaborative relationship between the community and the protected area. While the community benefits from access to the protected area, the interests of the protected area are furthered with the formation of a buffer zone, in the form of a community conservation area, managed according to environmental conservation strategies. The development of this conservation area would therefore contribute to the conservation of the resource base inside and outside the boundaries of the protected area.

5.2. AGRICULTURAL DEVELOPMENT MODEL

Subsistence agriculture is the predominant economic activity in KwaJobe, with most households undertaking cropping activities (Vandeverre *et al.* 1989). The results of a survey carried out by Ogg (1995) showed that the people of KwaJobe are currently allocated field of approximately 7 ha each. The three main crops planted in these fields are cotton, maize and beans, while limited quantities of vegetables, sugar cane and other horticultural crops are also planted. These crops are cultivated by means of dryland cropping and are planted soon after the first seasons rains have fallen, usually in November. Some irrigation is required for all these crops and is generally carried out by hand with buckets, or is flood irrigated from rivers or pans. This is a primary reason why the land adjacent to the Mkuze river and on the floodplains is highly valued as agricultural land. Access to the river makes irrigation of crops easier in fields planted off the floodplains.

Ogg (1995) found that drought is the greatest limiting factor for agricultural production in KwaJobe. The maize crop fails an average of 6 out of 10 years, and cotton crop fails on average 2 out of 10 years as a result of drought. Furthermore, only 30% of the time do cotton producers produce break even yields, while profits are generated only 50% of the time. Maize, which is grown mainly as a source of food for the household, is more susceptible to drought than cotton, and 30% of the time there are insufficient early rains for planting to occur. A limited maize crop is realised only 40% of the time. Research by Ogg (1995) found that an average annual income of R 3038 per household is currently generated from crop farming in KwaJobe. This income is used to support a household with an average of eight dependants (Ogg, 1995). However production rates from subsistence agriculture in the Ingwavuma-Ubombo region have been found to be declining due to population pressure and deteriorating natural environments (ZAI, 1994). Therefore current levels of production may not be sustainable in future. These declining production levels will thus result in a decrease in income generation and a deterioration of the socio-economic conditions of households dependant on subsistence agriculture in KwaJobe.

Low and unreliable production levels from current agricultural practices and lack of nutritional security led to the KwaJobe community expressing its desire for agricultural development, which could lead to improvements in the socio-economic conditions of people in the Jobe ward.

Research by Ogg (1995) involved negotiations with the people of KwaJobe who are currently carrying out farming activities. During these negotiations the KwaJobe farmers agreed that the objective of an irrigation scheme development should be the development of farming units from which production levels could yield a disposable income of R 25 000 per annum.

The crop production model generated by Ogg (1995) is further based on the assumption that the marketing limitations which may influence irrigation development in KwaJobe can be equated to those currently experienced by the farmers at the Makatini Irrigation Scheme on the Pongolo Floodplain. Furthermore it assumes that management abilities of the Jobe people can be equated to those of the farmers involved in the Makatini Scheme. Based on these assumptions, as well as soils, climatic conditions and current cropping patterns, Ogg (1995) developed a development model with two potential cropping plans for KwaJobe (Tables 4 and 5). Both plans included a double cropping programme, with cropping patterns varying between seasons according to summer and winter crop suitabilities. Plan B is primarily based on sugar cane production, but would require the development of a sugar mill in the region.

Table 4: Summer and winter cropping plan A.

	COTTON	MAIZE	BEANS	CABBAGE	TOMATOES	BANANAS	FALLOW
SUMMER	80%	0%	0%	0%	0%	10%	10%
WINTER	0%	40%	10%	5%	5%	10%	30%

Table 5: Summer and winter cropping plan B, including sugar cane.

	SUGAR CANE	MAIZE	BANANAS	FALLOW
SUMMER	80%	0%	10%	10%
WINTER	80%	10%	10%	0%

5.2.1. The economics of the irrigation development model

The soil characteristics, together with the availability of water for irrigation from the Pongolapoort Dam make KwaJobe a potentially highly productive agricultural area (Vandeverre *et al.* 1989), and the provision of irrigation can afford the opportunity for local subsistence farmers to become successful commercial farmers (Ogg, 1995).

Based on the income and expenditure budgets calculate by Ogg (1995), Ogg (1995) projected the net profit per hectare for the various crops (Table 6). Expenditure costs included in Table 6 are calculated to include repayments on a capital loan needed for the development of a farming unit. It further includes annual pumping and water costs for the supply of water from the Pongolapoort Dam, and running costs for crop production. The size of the initial development loan and water costs used in the expenditure costs are based on the figures obtained from the Makatini Irrigation scheme (Ogg, 1995). These include an initial in-field irrigation loan of R 5100/ha. Ogg (1995) estimates repayment could be amortised over 12 years at a rate of 15 %, resulting to an annual repayment of R 941/ha. Annual pumping costs included in the calculations were estimated at a rate of R 500/ha.

Table 6: Potential yields and finances from irrigation farming in KwaJobe (Ogg, 1995)

CROP	YIELD (/ha)	INCOME (R/ha)	EXPENDITURE (R/ha)	PROFIT (R/ha)
Cotton	2000 kg	R 3 600	R 3 144	R456
Maize -dry - green cobs	2 tons 8 000 cobs	R1 600 R 2 800	R 2 857	R 1 543
Cabbage	30 tons	R 12 000	R7 207	R4 793
Tomatoes	25 tons	R 25 000	R 14 520	R10 309
Bananas ²	35 tons	R 17 500	R 14 107	R3 392
Beans	6 tons	R 4 800	R 2 332	R2 468
Sugar Cane ²	85 tons	R 9 180	R 7 478	R 1 702

² Returns calculated as annual returns from perennial crops

Using these production estimates, a farming unit of 8.1 ha according to Plan A, or 14 ha if planting according to Plan B will be required by a farmer in order to earn a disposable income of R 25000 per annum (Ogg, 1995). However the development of irrigation farming in KwaJobe is not without risk of financial failure. The management levels needed for the different cropping plans is high, and irrigation development can therefore only be considered if there are adequate and training support services are available (Ogg, 1995).

5.2.2. Analysis of the irrigation model in the context of ICDP principles

The benefits from the development of a sustainable agricultural irrigation development in KwaJobe could be substantial. Long term average yields generated from current farming practices are low, and crops fail on average six out of ten years causing severe financial and nutritional hardships (Ogg, 1995). However the provision of water for the development of an economically profitable commercial irrigation projects could provide a greater degree of food security and economic stability in the area in the long run. Secondly, Ogg (1995) found that at present 1000 ha of dryland farming generates employment for approximately 194 people per annum in KwaJobe. In contrast 1000 ha of irrigation lands in neighbouring irrigation schemes generated 390 jobs per annum. The development of irrigation projects, based on a model such as proposed by Ogg (1995), could therefore benefit not only those owning farming units, but could also provide secondary benefits in the form of incomes generated through employment to others in the community. Irrigation development also offers the opportunity to increase crop productivity levels and profitability of cropping practices compared to dryland agriculture (Ogg, 1995). This represents an increase in the utilization potential of the natural resource base, which if carried out correctly can be sustainable in the long term.

The irrigation model developed by Ogg (1995) provides an indication of the potential profitability of agriculture in KwaJobe, and the role agriculture can play in improving the socio-economy of the Jobe people. When applying the irrigation model described by Ogg (1995) in terms of an ICDP however, there are a number of additional issues which will need to be addressed. One of the main objectives of ICDPs is to provide local communities with the skills and resources necessary to increase their incomes

(Brown and Wyckoff-Baird, 1992). Ogg (1995) reports that the management level required by farmers to develop the proposed farming units is higher than the current levels possessed by farmers. Therefore, Ogg (1995) states:

"Irrigation development should therefore only be considered if there are adequate support services, training, extension, and an understanding by farmers that by simply supplying irrigation their problems will not be solved".

The development of an irrigation scheme thus needs to facilitate the simultaneous transfer of managerial and technical agricultural skills to the local community. The development of these skills would lead to community capacity building and empowerment which could in turn enable the community to consider other development options and in time develop sustainable resource use patterns and socio-economy.

The model does incorporate the ICDP principle of the need for environmental education. The provision of agricultural extension activities should include the provision of information regarding issues of sustainable resource use and the value of the natural resource base. This education needs to increase people's understanding of the importance of resource conservation, and to bring about a change in their patterns of resource use to facilitate the maintenance of the long term productivity of the resource base.

An agricultural development project which is based on sustainable resource utilization could lead to an improvement in agricultural profitability as well as the conservation of the resource base. The implementation of a sustainable agricultural development based on the ICDP principles of community capacity building and participation can contribute not only to an improvement in the local socio-economy, but also to an understanding by the community of the importance of long term sustainability of farming practices. This understanding could promote the people to change from unsustainable resource use activities to sustainable resource use practices.

5.3. INTEGRATED RESOURCE USE DEVELOPMENT

The Conservation of Agricultural Resources Act, No.43 of 1989, states that no land user may utilize vegetation within 10 metres of the flood area (10 year flood level) of the vleis or water courses in a manner that causes deterioration of the agricultural resources. Due to the regular flooding of the Mkuze river, this Act therefore precludes agricultural development on any floodplains and on the banks of the river. Furthermore major financing houses such as the KwaZulu Finance Corporation (KFC) have a policy not to finance agricultural developments within this 10 metre flood level of rivers or on floodplains or vleis, which may result in the ecological deterioration of the natural resource (K van Rensburg, 1996, *pers. comm*). These two factors therefore legally and financially virtually exclude the development of agricultural schemes, dryland or irrigation, on the floodplains and banks of the Mkuze river. The fact that there are alternative sites for agricultural development in KwaJobe therefore negates the need to develop agricultural schemes in these areas. Should irrigation schemes be developed elsewhere within KwaJobe, it could further reduce the dependency on these floodplains for current agricultural activities, thereby freeing them for alternative ecologically sustainable use.

While the development of either resource based tourism or irrigation agriculture could result in improvements to the local socio-economy and management of the resource base, their development should not be seen in isolation of each other or existing land uses. The integration of tourism development and agricultural development could form part of an overall regional integrated land use plan. The integration of these activities could be brought about by the zonation of land use, according to its greatest development potential and compatibility with neighbouring land use practices. Planning which integrated resource use activities may assist not only in facilitating development potentially yielding the greatest sustainable utilization of the resource base, but may also reduce conflict between conflicting land uses thereby improving overall resource yields in the area. The establishment of an integrated land use plan for KwaJobe and the surrounding areas is therefore in the interests of the Jobe people and their need for sustainable socio-economic development.

³ Mr Kevin van Rensburg, KwaZulu Finance and Investment Corporation, P.O.Box 94, Mkuze.

5.4. COMMUNITY RESPONSES AND SOCIAL ACCEPTABILITY OF MODELS

The development priorities expressed by individuals and groups of the KwaJobe community focussed on socio-economic needs. Interviews with groups and committees (Table 7) revealed that the development needs as identified by the community most frequently included the following needs:

- Jobs
- Upgraded roads
- Piped water
- Clinics
- Creches and schools
- Telephones

Table 7: Groups and committees of KwaJobe interviewed during the study.

GROUPS AND COMMITTEES	APPROX. NUMBER OF PARTICIPANTS	NUMBER OF MEETINGS
KwaJobe Tribal Authority	7	5
KwaJobe Farmers Association	33	2
KwaJobe Development Committee	4	2
KwaJobe Committee Representatives	42	2
IziNeshe Group	12	1
Gumede Group	8	1
Dlamini Group	10	2
Ekuvaleni Teachers Group	5	1

The KwaJobe Committee Representatives were made up of a representative from a number of groups and committees (Table 8)

Table 8: Groups and committees represented by the KwaJobe committee representatives

GROUP OR COMMITTEE	ROLE OR ACTIVITY
KwaJobe Farmers Association	Farming representatives
Qubekani Garden Association	Co-ordinators of Qubekani vegetable gardens
Opansi Garden Club	Co-ordinators of Opansi vegetable gardens
Vesukykhanya Garden Club	Co-ordinators of Vesukykhanya vegetable gardens
KwaJobe Education and Culture	Promotion of maintenance of local cultural
Masikhulisizwe Working Group	Establishment of development projects
Sukumani Sewing Group	Women's groups for sewing production and training
KwaJobe Burial Association	Burial association
Khayalithe Burial Association	Burial association
Masikhulisane Creche	Creche
Qubakane Creche	Creche
Mseni Creche	Creche
Ekukhanyeni Creche	Creche
Siyasizwa Association	Promotion of propoagation of fruit trees
Ngomsawakhe Project	Support project for upliftment of local people

The need for jobs was given as the highest development priority by all groups listed in Table 7. They reported that large numbers of young people were finishing school every year but could not find work and were remaining at home. This was increasing the number of people in each household who were dependent on an already low average annual income. Upgraded roads and piped water were the next priorities identified by the Tribal Authority, KwaJobe Farmers Association, KwaJobe Development Association and KwaJobe Committee Representatives. Mr Zikhali, with agreement from the Tribal Authority, stated that road infrastructure had to be a development priority as the current poor road network would inhibit any potential development, while also currently made transport difficult. The reason given by these four groups for the prioritization of piped water as a development priority was that it would help to increase the agricultural productivity of the area. The Tribal Authority, KwaJobe Development Committee and Ekuvaleni Teachers Group also agreed that piped water was a

priority as they said it could reduce water related illnesses in the community. This was further supported by the clinic representatives from the KwaJobe Committee Representatives.

Representatives at the KwaJobe Committee Representatives meeting expressed the need for more clinics in KwaJobe. This need was also expressed at meetings with the Tribal Authority and KwaJobe Development Committee. Teachers from Ekuvaleni reported that there was a great need for creches to help to prepare children for school. Mothers also expressed a need for creches during informal meetings. They said that being able to send children to creche enabled them to spend more time on chores. The teachers group and KwaJobe Development Committee reported that children had to cover great distances to school, some walked as much as 10 kilometres to get to school every day, and they therefore reported that additional schools were thus needed. The need for telephones was raised at meetings with the Tribal Authority and KwaJobe Development Committee.

Preceding the introduction of the two development models to any of the groups in KwaJobe, the KwaJobe Tribal Authority and the Development Committee expressed the opinion that the community already has a substantial part of its land dedicated to conservation, by the fact that the Gwambane area was incorporated into the Mkuzi Game Reserve. Mr Manzi, a KwaJobe *Induna* of an area neighbouring on the Mkuzi Game Reserve, stated that the Gwambane area was rightfully the land of the Jobe people. He stated that the land should be fenced out of the reserve, and that the community should be able to manage and derive direct benefits from this land, by for example hunting game animals occurring in the area.

A meeting with the KwaJobe Committee Representatives revealed predominant support for agricultural development in KwaJobe. When asked for suggestions for preferred development activities, this group proposed the following activities:

- horticultural crops such as mangos and bananas
- « sugar cane
- woodlots and trees

No proposals for developments such as tourism developments were suggested by this group. The opinions expressed at this meeting were corroborated at a number of other meetings,

including the meeting with IziNeshe, Gumede and Dlamini representatives. Three farmers were interviewed informally during a site visit to an area along the Mkuze river. These farmers were tending their cattle grazing at the river at the time, and all reported to have allocated fields for cropping activities on the banks of the river. All three stated that they would like to see development which would improve the viability of their fields for cropping, such as ways to prevent the destruction of their crops when the river was in flood. None of these farmers supported the suggestion of relocating their fields to areas away from the river. Interviews with three households on the banks of pans in KwaJobe (Muzi and Ceswane Pans), also expressed the wish to continue cropping activities, and supported the need for development which could assist them to increase production levels. The conclusion drawn from these interviews was thus that the people of KwaJobe prioritised agriculture development, from which it was stated the community could derive direct benefits in the form of food and cash incomes.

The general expression of the need for agricultural development by the KwaJobe community has resulted in research into the production potential of various crops KwaJobe. The Department of Agriculture (Jozini), ACER Africa (Agricultural, Community, Environmental and Rural Development Consultants), and Siyasiza Trust have all initiated research into the viability of the production of crops such as mangos and litchis in KwaJobe.

The first suggestions regarding the development of a conservation area in KwaJobe were not supported by any of the groups interviewed in KwaJobe during this study. The Tribal Authority stated that land was a scarce resource and they could not afford to set land aside for this purpose. However interviews with the KwaJobe Development committee and KwaJobe Committee Representatives revealed that there were individuals who recognise that a resource based tourism development could generate valuable economic development in KwaJobe. The *hinduna* of the Tribal Authority all agreed that agricultural development was greatly needed to help development in the area, however they would welcome any form of development. This opinion was also expressed at the meeting with the KwaJobe Committee Representatives.

Following the interviews to establish the development needs and preferences as reported by the groups and committees interviewed from KwaJobe (Table 7), a description of the two development models and their potential benefits was presented to the Tribal Authority,

KwaJobe Development Committee, KwaJobe Committee Representatives, representatives from Induna Dlamini's area and the Farmers Association. Both development models were enthusiastically supported, while the Tribal Authority expressed particular support for the development of the tourism model. *Induna* Gumede reported that he thought that benefits from a tourism development could be realised within a shorter period than could benefits from an agricultural irrigation development, and therefore supported the implementation of a tourism development. *Induna* Gumede's idea was supported by all the *Izinduna* at the meeting. They thought that the infrastructural development required for the tourism operation could be developed within a shorter period than those required for irrigation. Therefore the period within which the first benefits could be realised was shorter than that of an irrigation development. A group of nine women, interviewed during an informal meeting, also expressed support for the tourism model. They felt that the employment opportunities generated would be an important benefit to them. They were not concerned that this employment would reduce the labour support for household duties, as they said there were many dependants within each household and households could afford to lose members to alternative sources of employment. These family members would then remit part of their earnings to the household.

The sites thought to be most suitable for the conservation area and lodge, along the Mkuze river or Muzi pan, were discussed during the interviews with the Tribal Authority, Development Committee, KwaJobe Committee Representatives, representatives from Induna Dlamini's area and the Farmers Association. *Induna* Gumede stated that there was a shortage of land as there were so many people settled in KwaJobe. However he said that no people were settled on the floodplains or on the banks of the Mkuze river. These areas were therefore suitable sites for the development of a tourism enterprise and conservation area. The *Izinduna* agreed that because land was a scarce resource, the size of the area needed for the development of a conservation area and lodge would be an important determinant of the acceptability of the development. The members of the Tribal Authority did however agree that the potential profitability of the tourism development justified the investment of land in the development of a conservation area and lodge.

The issue of current land use patterns along the river and their potential conflict with a tourism development in this area was discussed at the meetings. During discussions with the Tribal

Authority, *Induna* Gumede reported that the fields located along the river were important to the people for the production of food, because they were close to a water supply. He said it would not be easy to "*chase*" people away from these fields. *Induna* Jobe said these people could be allocated alternative sites for their fields, however they would need to be paid compensation to help fund the re-development of new fields. Interviews with three farmers currently farming lands along the river revealed that they were hesitant to support a tourism and conservation area development in this area, as they were unsure about the viability of leaving their current fields. The location of potential development sites along the river was however supported by the Tribal Authority as there were no homesteads located in these areas. Mr Qwabe of the KwaJobe Development Committee stated that people would not be happy if homesteads had to be relocated to facilitate development, however the relocation of fields could be acceptable.

The success of the potential resource based tourism development in KwaJobe depends largely on a relationship of trust and co-operation being maintained between the KwaJobe community and the NPB. Despite past antagonistic relations, the *Izinduna* and members of the KwaJobe Development Committee members of the community regard the staff of the Mkuzi Game Reserve as a valuable source of assistance and development related information. *Induna* Manzi and Mr Qwabe stated that a number of co-operative developments had recently been undertaken with the Mkuzi Game Reserve, such as the establishment of a community curio stall in the Game Reserve and the development of a water pipeline from the river to a site in KwaJobe. *Induna* Manzi reported that negotiations and discussions were often held with the authorities of Mkuze Game Reserve and a good understanding was developing between them. The issue of the community's reported claim to Gwambane however remains one which needs to be resolved.

The informal interview with three farmers at the Mkuze river, as well as the Tribal Authority and Development Committee, all confirmed that the banks of the Mkuze river provide an important source of winter grazing for cattle, and that they felt they could not suspend these activities. The development of a conservation area along the river would not however depend on the exclusion of cattle from the area. Goodman (*pers.comm.* 1996) reported that the grazing patterns of cattle could be equated with those of bulk grazer game species such as

buffalo, which were indigenous to the area. The winter grazing patterns of the cattle herds could therefore be integrated into the management of the conservation area and tourism development. Management and care of these herds would have to be arranged to ensure they did not become prey to predators within the game reserve. Furthermore, as reported by Vandeverre *et al.* (1989), the integration of livestock management with crop production could increase the potential for the utilization of edible crop residues as fodder which could increase livestock production levels. The development of a conservation area and irrigation scheme could therefore compliment livestock production in the long run.

The KwaJobe Farmers Association, and representatives from *Induna* Dlamini's area were asked if the development of an irrigation scheme proved profitable if they would be willing to discontinue cropping activities on floodplains and along the banks of the Mkuze river. They agreed that this was possible but again the issue of land shortages was raised. They were not sure if there was sufficient land for reallocation of cropping units for it to be profitable for them to all discontinue cropping activities in these areas. The number of dependants in each household was great and therefore even if some members found employment in other developments it was likely that if all household wishing to farm were not allocated farming units for irrigation they would continue current dryland cropping activities.

All those interviewed from the Jobe community expressed support for a potential irrigation development. However Ogg (1995) also reported an unwillingness among the Jobe people to relocate homesteads to facilitate the development of irrigation fields. As a result of this he reported that the potential irrigation scheme would need to be designed to allow flexibility in farming unit location and mode of irrigation. This could in turn have significant implications on development costs of farming units. The Tribal Authority acknowledged this but confirmed that people were unwilling to vacate current homesteads.

In summary therefore there are two criteria according to which the KwaJobe community primarily evaluates the desirability of a development project. Firstly its ability to meet the development needs identified by the community, and secondly the changes which need to be brought about in the community to facilitate the implementation of the development. The people of KwaJobe have prioritized the provision of a range of development needs. These

needs focus on economic development such as employment and income generation, and health and welfare services such as creches and clinics and piped water, and infrastructural development involving the development of roads and communication networks. Development proposals are primarily evaluated by the community in terms of the potential of the proposed development to meet these needs. Development proposals which fail to meet these development priorities identified by the community, will generate little support or co-operation from the community. Another evaluation criteria used by the community to evaluate the feasibility and desirability of a development proposal is the changes in resource use patterns or activities which will need to be brought about by the community to facilitate the implementation of the development. The primary constraint restricting a development project is the unwillingness of the community to relocate homesteads in order to make an area or resource available for development. The KwaJobe Tribal Authority does however acknowledge that the community is in great need for development initiatives, and prefers to encourage all proposals rather than draw up predefined preferences of types of development, for fear of deterring any potential opportunities for development.

CHAPTER 6

DISCUSSION AND CONCLUSIONS

The findings of this study show that the Jobe community is characterised by high levels of unemployment, low annual cash incomes, low adult literacy levels and high population densities. Not surprisingly the community's resource management and development priorities focus on meeting current economic needs through employment and income generation, meeting social needs and infrastructural development. These findings support the hypothesis of this study that the prevailing socio-economy in underdeveloped rural communities leads to the trend of resource management directed at meeting needs and alleviating current socio-economic hardships and shortages. The increasing population size and decreasing levels of productivity in the local economy are resulting in an increase in the levels of socio-economic needs in the Jobe community. As needs grow there is an increased dependency on the natural resource base for meeting these needs. However, as a result of the current unsustainable resource use activities, the needs of the community are greater than the supply generated from the natural/resource base. This is consequently leading to overutilization of the resource base, and increasing levels of environmental degradation. Environmental degradation is in turn negatively impacting on the productivity of the natural resource base, and its ability to meet the needs of the local population (Figure 10).

The development priorities identified by the Jobe community relate directly to employment and income generation and meeting welfare needs. The community perceives these development opportunities result in improvements in the local economy and benefits to the population. Conversely, the community perceives environmental conservation as a reallocation of land, and does not identify the links which this reallocation of land has with improvements to the local economic and welfare. The community is unwilling to suspend its current land use activities to facilitate the reallocation of land due to the dependence on these activities to meet daily survival needs. The uncertainty associated with the intangible projected benefits of agricultural benefit from irrigation also makes the option to be cautiously supported. Furthermore, the uncertainty regarding government deliverance and support for the input needed for the development of an irrigation scheme, results in hesitant support by the community for the reallocation of resources to facilitate agricultural development.

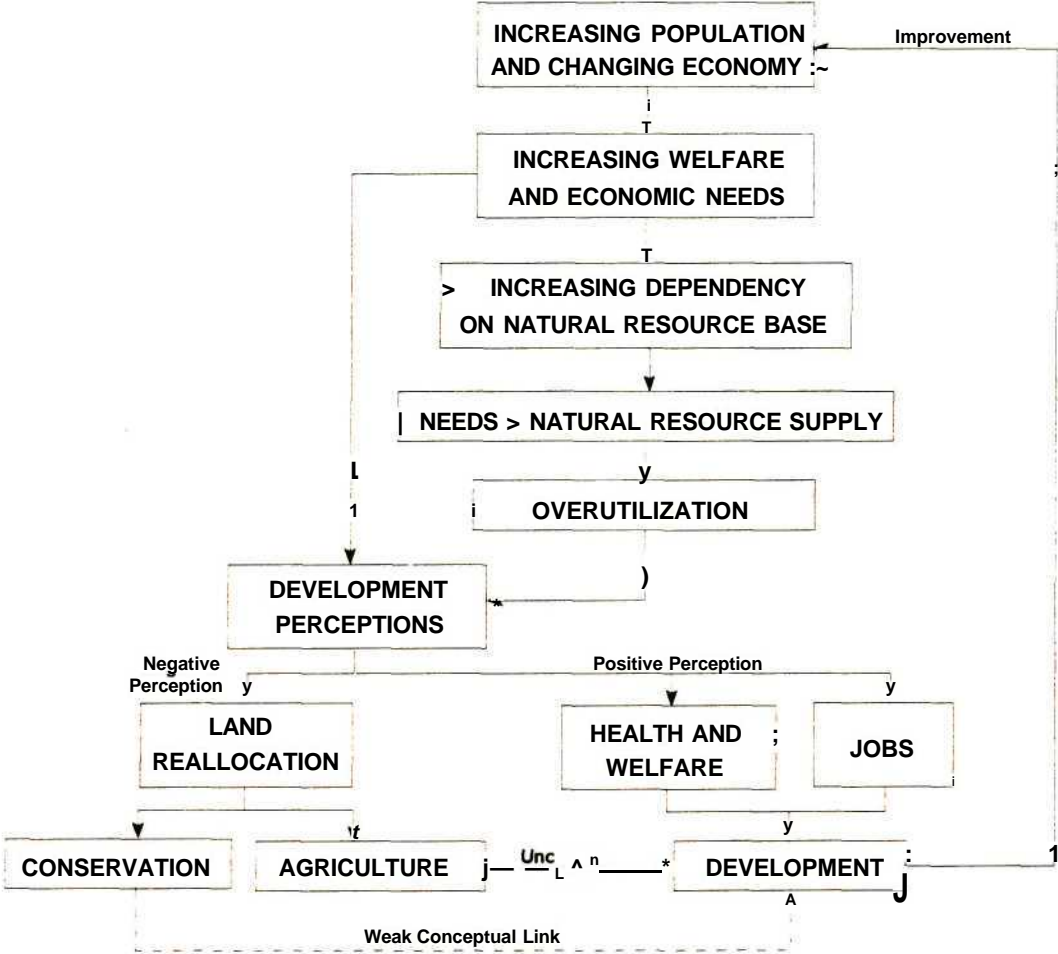


Figure 10: A conceptual framework showing the interrelationships between factors influencing the perceptions the people of KwaJobe have of development and conservation.

The establishment of projects which integrate conservation and development in KwaJobe are perceived by "outsiders" as way of alleviating the dependence on unsustainable resource use activities, and the return to more sustainable resource use activities. However since the people of KwaJobe associate conservation with reallocation of land to at best uncertain improvement in socio-economic conditions, they reacted negatively initially to the notion of more "conservation". Their attitudes are hardened by the "handing over" of the Gwambane land for conservation from which they derive minimal benefit. Clearly, unless the socio-economic benefits are tangible they would continue to resist future conservation initiatives. The Jobe community did indicate support for the development of a resource based tourism enterprise, however this was purely evaluated on the basis of the economic returns which could be

generated by the enterprise, and not because of the benefits to conservation. When emphasis was placed on potential economic benefits of resource based tourism, and as the benefits become more "real" in the minds of the people, attitudes to conservation softened. Thus conservation could be achieved if it followed development.

While ICDPs may provide a tool for the initiation of sustainable development, the effectiveness and success of these projects depends largely on the capability of the development to meet the socio-economic needs of the community. For this to occur the projects must take into consideration the circumstances and needs experienced by each community. These considerations upon which the development is based must therefore include:

- the ability of the development initiative to meet the social and economic needs identified by the community
- the changes which need to be brought about in the community activities and practices to facilitate the development
- community empowerment to facilitate local community management of the changes in resource use activities

Should the projected social and economic benefits not be appreciated and valued, the community would not support the development and would seek alternative uses for the resources which focus on the needed socio-economic development. The KwaJobe community; does not therefore judge or value development initiatives according to their conservation value, but rather in terms of their potential to relieve poverty and its associated economic pressures. Development initiatives must seek to alleviate poverty and associated pressures. Failure to first address these issues places conservation in the invidious position of appearing to address matters which are of benefit to "outsiders" and not the local community. Development initiatives cannot stabilize the environmental system if unstable socio-economic systems prevail. A stable socio-economy founded on sustainable resource use can facilitate opportunities for the development of conservation initiatives.

The application of ICDPs tend to approach rural development issues from the perspective of the need for environmental conservation. The promotion of biodiversity conservation is the primary focus of ICDPs Initiatives are sought to make the conservation of the natural resource

base economically viable to local communities by means of the inclusion of economic development components in the projects. Development is thus seen as a tool to facilitate conservation of the environment and biodiversity. However the results of this project indicate that attempts to increase the options for communities to sustainably manage their natural resource base cannot be brought about without first addressing the socio-economic needs of local communities. The key factors in the formulation of sustainable development in underdeveloped rural areas are therefore not conservation requirements, but rather ways of meeting communities development needs.

While current initiatives focus on conservation, it should be considered that greater success could be achieved by focussing on development. As opposed to identifying a natural resource or feature which is conservation worthy and developing an initiative whereby this conservation could be achieved, the development needs of the community should first be identified. Linkages between economic and social development need to be explicit, acknowledged and understood, and need to be accepted by the community. Therefore rather than attempting to achieve development through conservation, initiatives should focus on achieving conservation through development. For example, the development of sustainable and economically productive initiatives which increase employment and revenue earning capacity within the community could also reduce the dependency on marginally productive and ecologically sensitive areas. The reduction in pressure and dependency on conservation worthy or ecologically sensitive areas could then free these areas for the establishment of conservation activities, which could bring further economic and social benefits to the community.

The challenges and conditions faced by the people of KwaJobe are characteristic of many rural communities in underdeveloped regions. The conclusions drawn regarding rural community responses to development and conservation issues are thus relevant to development in many underdeveloped regions. It is therefore recommended that the focus of ICDPs in underdeveloped rural areas should shift away from the focussing on conservation, to focussing on the facilitation of socio-economic development through which conservation may be achieved. The design and implementation of integrated development and conservation projects (IDCPs) could facilitate the stabilization of the rural socio-economic systems and thereby create the opportunity for the development of a stable environment. The recommendation does not

simply relate to a name change, but rather to a fundamental change in the focus of rural development. Integrated development and conservation projects need to provide explicit reference to the linkages between economic and social development. These linkages need to be understood and accepted by the community. An understanding and acceptance of these issues and linkages may then generate the support of the community for the reallocation of land and natural resources, thereby creating the opportunity for environmental conservation.

REFERENCES

- Anderson, D. and Grove, R. eds. 1987. *Conservation in Africa: People, policies and practice*. Cambridge University Press, Cambridge.
- Armitage, D. 1995. An integrative methodological framework for sustainable environmental planning and management. *Environmental Management*, 19(4) : 469 - 479.
- Armitage, D. and Garcha, S. 1995. A participatory methodology for community-based land and resource use planning: A case study from Tanzania. *PLA Notes*, 23 : 16 - 19.
- Ashley, C. and Garland, E. 1994. *Promoting community-based tourism development*. Ministry of Environment and Tourism Namibia. Windhoek. (Research Discussion Paper No. 4).
- Buchan, A. 1988. *Grazing resources of the Makatini Flats: Production use and significance in the local socio-economy*. Institute of Natural Resources, Pietermaritzburg. (Investigational Report No. 32).
- Chambers, R. 1983. *Rural development: Putting the last first*. Longman Scientific and Technical, Harlow, United Kingdom.
- Creemers, G. 1997. Economic perspectives on the optimization of consumptive and non-consumptive uses of wildlife in Mkuzi Game Reserve. Draft, Unpublished Report. Natal Parks Board, Pietermaritzburg.
- Creemers, G. 1996. A joint venture model for community based ecotourism. Draft, Unpublished Report. Natal Parks Board, Pietermaritzburg.

- Cubbin, T. 1993. The history of Mkhuze Game Reserve. Unpublished Report. Natal Parks Board, Pietermaritzburg.
- Cumming, D. 1990. *Wildlife conservation in African parks: Progress, problems and prescriptions*. WWF, Harare. (World Wildlife Fund for Nature Project Paper No. 15).
- Davion, R.J. 1996. A contribution to understanding contemporary people-environment dynamics: South African approaches in context. M.Soc.Sci. Thesis. University of Natal, Pietermaritzburg.
- Erskine, J. 1996. Infocottages: new approach to rural entrepreneurship. *Leading Edge*, 4(1) : 38-41.
- Goodland, R. 1995. The concept of environmental sustainability. *Annual Review of Ecological Systems*, 26 : 1 - 24.
- Goodman, P.S. 1987. Proposals for the establishment of a natural resource area on the State Land forming the northern boundary of Mkuzi Game Reserve Unpublished Memorandum No. 2/1 of July 1987. Natal Parks Board, Pietermaritzburg.
- Goodman, P.S. 1990. Soil vegetation and large herbivore relations in Mkuzi Game Reserve, Natal. PhD Thesis. University of the Witwatersrand, Johannesburg.
- Goodman, P.S. 1992. KwaJobe sacred site, cultural site and resource area development. Natal Parks Board, Pietermaritzburg. (Unpublished Memorandum No. E 23/1 of December 1992).
- Heeg, J. and Breen, C. 1982. *Man and the Pongolo Floodplain*. CSIR, Pretoria. (South African National Scientific Programmes Report No. 56).

- HSRC. [n.d] 1991 South African population census data. Electronic data base. Human Sciences Research Council, Durban.
- IIED. 1994. *Whose Eden? An overview of community approaches to wildlife management*. International Institute for Environment and Development, London.
- Infield, M. 1988. Attitudes of a rural community towards conservation and a local conservation area in Natal, South Africa. *Biological Conservation*, 45: 21 - 46.
- IUCN. 1980. *World conservation strategy: Living resource conservation for sustainable development*. IUCN, Gland.
- Jones, B. 1995. *Wildlife, management, utilization and tourism in communal areas: benefits to communities and improved resource management*. Directorate of Environmental Affairs, Namibia. (Research Discussion Paper No. 5).
- Kiss, A. ed. 1990. *Living with wildlife: Wildlife resource management with local participation in Africa*. World Bank. Washington DC. (World Bank Technical Paper No. 130. Africa Technical Department Series).
- Makombe, K. ed. 1994. *Sharing the land: Wildlife, people and development in Africa*. IUCN/ROSA, Harare. (Environmental Issue Series No. 1).
- Mander, M. and Creemers, G. 1995. *The economic potential of a conservation and tourism development in the Gaza and Maputo Provinces, Mozambique*. Institute of Natural Resources, Pietermaritzburg. (Investigational Report No. 121).
- Mander, J.J. and Quinn, N.W. 1995. *Proposed Tongaat-Hulett sugar development: Issues report*. Institute of Natural Resources, Pietermaritzburg. (Investigational Report No. 124).

- Mason, J. and Danso, E. 1995. PRA for people and parks: The case of Mole National Park, Ghana. *PLA Notes*, 22 : 76 - 79.
- Massyn, P.J. [n.d.] KwaJobe Ecotourism Development: Projected economic returns. Unpublished Report. Ecopartnerships Africa, Johannesburg.
- McNeely, J. Miller, K. Reid, W. Mittermeier, R. and Werner, T. 1990. *Conserving the world's biological diversity*. IUCN, Gland.
- MIDNET. 1994. *Participatory Rural Appraisal (PRA) in southern Africa*. MIDNET PRA Interest Group, Pietermaritzburg.
- Murphree, M.W. 1991. *Communities as institutions for resource management*. Centre for Applied Social Studies, Harare. (CASS Working Paper).
- Murphree, M.W. 1993. *Communities as resource management institutions*. Sustainable Agricultural Programme. IIED, London. Gatekeeper (Series No. SA36).
- Nabasa, J. Rutwara, G. Walker, F. and Were, C. 1995. *Participatory rural appraisal, practical experiences*. Natural Resource Institute, Chatham, United Kingdom.
- Natal Parks Board. 1992. Neighbour relations policy and supporting actions. Unpublished Report. Natal Parks Board, Pietermaritzburg.
- Newmark, W. Leonard, N. Sariko, H. and Gamassa, D-G. 1993. Conservation attitudes of local people living adjacent to five protected areas in Tanzania. *Biological Conservation*, 63: 177- 183.
- Ogg, M. 1995. Feasibility study into the supply of irrigation water to KwaJobe. Unpublished Report. Engineering and Soil Conservation Cedara College, Pietermaritzburg.

- Phillips, J. 1973. *Agricultural and related development of the Tugela and its influent surrounds*. Town and Regional Planning Commission, Pietermaritzburg.
- Steiner, A. and Rihoy, E. ed. 1995. The commons without the tragedy? Strategies for community based natural resource management in Southern Africa. Proceedings of the Regional Natural Resources Management Programme Annual Conference, Kasane, Botswana, 3 - 6 April, 1995. SADC Wildlife Technical Coordination Unit.
- Schuftan, C. 1996. The community development dilemma: what is really empowering? *Community Development Journal* 31(3) : 260 - 264.
- Vandeverre Aspey Robinson and Associates. 1989. *Ubombo-Inguavuma Structure Plan*. Report prepared for Department of Development Aid and KwaZulu Government. Vandeverre Aspey Robinson and Associates, Durban.
- Venter, A. Breen, C. and Marais, C. [n.d] The participative forum approach: Integrating the goals of conservation and the development of local indigenous peoples. Unpublished Report.
- Wells, M.P. and Brandon, K.E. 1993. The principles and practice of buffer zones and local participation in biodiversity conservation. *Ambio*, 22 (2-3) : 157 - 162.
- Wells, M. Brandon, K. and Hannah, L. 1992. *People and Parks: Linking protected area management with local communities*. World Bank, Washington D.C.
- Wynne, A.T. and Lyne, M.C. 1995. Communities, institutions and natural resources: An assessment of case-studies from KwaZulu-Natal. *Development Southern Africa*, 12 (5).
- ZAI Consultants. 1994. North Eastern Zululand Regional Plan: Phase 1 Position Statement. Draft, Unpublished Report. ZAI Consultants, Durban.