The Biodiversity Support Program

Study on the Development and Management of Transboundary Conservation Areas in Southern Africa

Final Draft
17 March 1999

by John Griffin — Team Leader: Institutional, Policy and Legal Analyst

with contributions from:

David Cumming	Conservation Biologist/Park Management Specialist
Simon Metcalfe	Sociologist
Mike t' Sas-Rolfes	Economist
Jaidev "Jay" Singh	Global Review
Ebenizario Chonguica	Angola Review
Mary Rowen	USAID Liaison and Technical Support
Judy Oglethorpe	Biodiversity Support Program

John Griffin
P.O. Box 31131
Lilongwe 3 Malawi
Tel/Fax: ++ 265-730-869
Email: Griffin@eo.wn.apc.org

U.S. Agency for International Development

This product was made possible through support provided by the Center for the Environment, Bureau of Global Programs, Field Support, and Research, U.S. Agency for International Development (USAID), under the terms of Grant No. DHR-5554-A-00-8044-00. Funding for the study came from USAID's Regional Center for Southern Africa (RCSA). The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

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Acronyms

AAAS	American Association for the Advancement of Science
ADMADE	Administrative Management Design
BC	Biodiversity Conservation
BSP	Biodiversity Support Program
CAMPFIRE	Communal Areas Management Program for Indigenous Resources
CBD	Convention on Biological Diversity
CBNRM	Community Based Natural Resource Management
CBO	Community Based Organisation
CBPP	Contagious Bovine Pleuropneumonia
CIDA	Canadian International Development Agency
CITES	Convention on the International Trade in Endangered Species
DED	German Development Service
DNA	Deoxyribonucleic Acid
DRC	Democratic Republic of Congo
ELMS	Environment and Land Management Sector
EU	European Union
FANR	Food, Agriculture and Natural Resources
FMD	Foot and Mouth Disease
FSTCU	Forestry Sector Technical Co-ordination Unit
GBF	Global Biodiversity Forum
GDP	Gross Domestic Product
GEF	Global Environment Facility
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HH	Household Head
IDC	Industrial Development Corporation
IFFW	Inland Fisheries, Forestry and Wildlife
IFSTCU	Inland Fisheries Technical Co-ordination Unit
IKS	Indigenous Knowledge Systems
IMF	International Monetary Fund
IR	Intermediate Result
IUCN	World Conservation Union
IUCN-ROSA	World Conservation Union-Regional Office for Southern Africa
JICA	Japan International Cooperation Agency
LIFE	Living in a Finite Environment
LIRDP	Luangwa Integrated Resource Development Project
LUP	Land Use Plan
M&E	Monitoring and Evaluation
MNR	Ministry of Natural Resources
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
NP	National Park
NRM	Natural Resource Management
OAU	Organisation of African Unity
PA	Protected Area
PPF	Peace Parks Foundation
RALE	Representative and Accountable Legal Entities
RAMSAR	Convention on the Management of Wetlands and Waterfowl
RCSA	Regional Center for Southern Africa
RETOSA	Regional Tourism Organisation of Southern Africa
ROU	Record of Understanding
RSA	Republic of South Africa

SACCAR	Agriculture and Research Sector
SADC	Southern African Development Community
SADCC	Southern Africa Development Co-ordination Conference
SANP	South African National Parks
SASUSG	Southern African Sustainable Use Specialist Group
SDI	Spatial Development Initiative
SEACAM	Secretariat for Eastern African Coastal Area Management
SpOA	Special Objective
SSC	Species Survival Commission
TBCA	Transboundary Conservation Area
TBNR	Trans Boundary Natural Resources
TBNRM	Transboundary Natural Resource Management
TBNRMA	Transboundary Natural Resource Management Area
TCU	Technical Co-ordination Unit
TFCA	Transfrontier Conservation Area
TFCAWG	Transfrontier Conservation Area Working Group
UN	United Nations
UNCRD	United Nations Centre for Regional Development
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VH	Village Head
WB	World Bank
WCC	World Conservation Congress
WMA	Wildlife Management Area
WSCU	Water Sector Co-ordination Unit
WSTCU	Wildlife Sector Technical Co-ordination Unit
WWF	World Wildlife Fund
WWF SARPO	World Wildlife Fund (Southern Africa Regional Programme Office)
ZACPLAN	Zambezi River Basin Action Plan
ZBWCRUP	Zambezi Basin Wetlands Conservation and Resource Utilisation Program

Acknowledgements

The author wishes to acknowledge with thanks all those whose assistance has contributed to the creation, development and completion of this report. In addition to those named, there are undoubtedly others who are not mentioned, but who have also played an important role in the study process.

First, the author would like to thank USAID's Regional Center for Southern Africa (RCSA) for supporting this study. Without RCSA's concern for sustainable management of natural resources and for the people of Southern Africa, this study would not have happened. Several people in RCSA were involved in various ways and special thanks go to Donna Stauffer, Pat Foster-Turley, Oliver Chapeyama and Elizabeth Soderstrom for their support, encouragement and participation in the study.

The study was managed by the Biodiversity Support Program (BSP), a consortium of World Wildlife Fund US, The Nature Conservancy and World Resources Institute. Judy Oglethorpe, Executive Director of BSP, should be commended for service beyond the call of duty. Judy was truly a collaborative partner, both from an administrative and from a technical standpoint and her insights into situations in the region from her own experience were particularly useful. Other BSP staff have been exceptionally supportive on various fronts, and special thanks go to Julia Karki, Tracie Sam and Julia Ellis.

The author would like to express deep gratitude to the team members for their many and valuable inputs, and the dedication and long hours they gave to the study. It was a pleasure to work with such a professional and supportive team, in which everyone maintained their sense of humour throughout. They were: David Cumming, Conservation Biologist/Park Management Specialist (WWF SARPO); Simon Metcalfe, Sociologist; Mike t' Sas-Rolfes, Economist; Jaidev "Jay" Singh, Global Review Consultant; Mary Rowen, USAID Liaison and Technical Support (USAID Washington); and Ebenizario Chonguica, Consultant on Angola (IUCN Mozambique). Special thanks go to Mary for her work on the final draft, in addition to her technical inputs.

Peace Parks Foundation (PPF) provided valuable support in many forms, including consultations, provision of information and development of databases and literature collection; special thanks go to John Hanks and Verner Myburg. WWF SARPO provided very effective and timely support in producing a wide range of maps.

Zimbabwe Trust provided valuable and efficient administrative and logistical support to the study in the region. In particular I would like to thank Barry Fowlds for all his outstanding help, especially the excellent organisation of the large workshop, when he co-ordinated arrangements for around 50 participants from 10 countries in the region.

I would like to acknowledge the assistance of all those people we consulted outside the region, particularly on the review of global lessons learned. Their insightful contributions have helped us to broaden our horizons of TBCAs and bring valuable lessons learned from elsewhere to Southern Africa. In particular I am very grateful to Dorothy Zbicz for allowing us to reproduce her global list of adjoining protected areas as an appendix to this report.

Finally and most importantly, I would like to recognise the amazing support and inputs from numerous stakeholders and specialists from around the region. Very many people gave us

their time, knowledge, opinions and insights into the current TBCA situation in the region, and their views of opportunities and constraints. They were numerous (see contact list in the appendix), and represented a broad range of stakeholders: government, NGOs, communities and private sector. Many were members of the SASUSG TFCA working group. Unfortunately there is not enough space to recognise them all sufficiently here, but I would like to mention in particular Trevor Sandwith, Sedia Modise, Steve Johnson and his colleagues, Leon Viljoen, Simon Munthali, Bartolomeu Soto, and Rod de Vletter. Many thanks to all those from the region who attended the consultative meeting in Harare, the transboundary session of the SASUSG members' meeting in Gaborone, and the workshop in Midrand. All those we met on field visits gave us fantastic help and support. Finally, I would like to thank the Honourable Peter Makoba, Deputy Minister of Environmental Affairs and Tourism in South Africa, for his inspiring address at the workshop which echoed the urgency and concern we heard throughout the region for the promotion of sustainable livelihoods through conservation and wise use of transboundary natural resources. Throughout the study we were very impressed by the enthusiasm for and ownership of the concept of transboundary conservation areas and transboundary natural resource management in the region, across all stakeholder groups and in all countries. I wish you all success in transboundary developments in the region in future years!

John Griffin

Lilongwe
Malawi

March 1999

Executive Summary

The study examines the growing field of transborder conservation in the context of southern Africa. The parameters that influence the success of Transboundary Conservation Areas (TBCAs) globally are discussed in relation to existing conditions in southern Africa. Particular attention is paid to the ecological, socio-political, economic, policy and institutional conditions in the SADC region. Specific enabling conditions and constraints are discussed.

The study, funded by USAID's Regional Center for Southern Africa (RCSA) and managed by the Biodiversity Support Program (BSP), incorporates information gathered by individual consultations with stakeholders in the region, stakeholder review of documentation, as well as three consultative meetings with key stakeholder groups.

TBCA terminology means many things to different people. The study realigns terminology to incorporate a more holistic approach as Transboundary Natural Resource Management (TBNRM). TBNRM incorporates the concerns of natural resource management, people, political institutions, and national and international organisations both inside and outside of gazetted protected areas.

At a global level, international borders are political and not ecological boundaries. As such, key ecological systems and components often occur in two or more nations and are subject to a variety and often opposing management and land use practices. The concept of international peace parks and transboundary conservation areas, developed to better manage both humans and natural resources, was first introduced in the 1920's and 1930's. By 1997, 136 existing and 85 potential TBCAs straddled 112 international borders in 98 countries. The main rationales for developing transborder conservation efforts, both globally and in the Southern African Development Community (SADC) region, are outlined below:

The ecological advantages of TBNRM areas are generally no different than those that occur with an increase in land area under ecologically sustainable management. The specific advantage of TBNRM is that where international boundaries have divided ecosystems, river basins, and wildlife migratory routes, formation of TBNRM areas can re-establish key ecological functions previously disrupted by artificial limitations imposed by political borders. The process to achieve greater ecological stability can be instigated by a number of non-ecological factors including a desire to improve regional political cooperation and stability, economic advantage, as well as cultural harmonisation.

Politically, the TBNRM process acts to decrease cultural isolation, foster peace and provide a basis to increase bi-national and regional cooperation. The process can also act as a stepping stone to enable discussion and collaboration in more politically charged arenas.

Culturally, formation of TBNRM areas assists in the economic livelihood of communities, supports cultural ties and traditions, and acts to re-establish or legalise cross-border movements.

Economically, TBNRM increases efficiency in managing and monitoring natural resources, eliminates or reduces duplication and creates an economy of scale. Overall TBNRM efforts can enhance economic opportunities (e.g. increased tourism potential and revenues).

Institutionally, the TBNRM process increases capacity among stakeholders and enables better decision-making about common problems, opportunities, and potentials.

The study examines each of these rationales within the context of existing conditions in southern Africa. The main arguments or enabling conditions for TBNRM/TBCA programs are presented below.

Ecology -The ecology of southern Africa ecosystems supports the viability of wildlife-based activities as a sustainable and profitable land use. Southern Africa is a arid and semi-arid region. Rainfall is highly seasonal and rainfall totals can vary greatly from year to year. Soil fertility is generally low in high rainfall areas and high in more arid areas (opposite to agricultural needs). Hence very little of the land mass is suitable for sustained cultivation (~5%). Currently about 5 % (about the maximum) is cultivated with 0.28% irrigated. While livestock can be supported on much of the land, both staple food production and livestock production are failing to keep up with population growth (25% per capita decline in production since 1980).

Large tracts of marginal land, not suited to agriculture or commercial livestock production, are well suited to wildlife/NRM programs (about 35% of the land could be used for wildlife of which 20% is currently under some form of wildlife use). Of these areas, a high proportion lies near or adjacent to international boundaries. The argument is made for the formation of TBNRM areas as a profitable and sustainable land use.

Cultural - The rapid growth of CBNRM initiatives throughout southern Africa effectively argues the importance of community involvement in TBNRM. In terms of sound land stewardship, community-based participation in NRM is increasingly important as States lack the ability to manage wildlife by regulation and enforcement alone. Many CBNRM activities currently occur in border areas. Increasing the scope of these efforts across borders not only increases ecosystem health for wildlife but also facilitates formal contact between communities (leaders, healers, resources user groups, local businesses, and land managers). In some areas cross border activities act to foster cooperation between communities, while in others, TBNRM would act as unifying vehicle to some of the 45 ethnic communities divided by international borders with the SADC region. Establishment of cross border contacts could act to advance integrated and sustainable land management as well as serve as an important vehicle for social change, strengthening of marginalized groups, and an increase in social and political stability.

Policy and Legislation - Southern African countries have realised the importance of regional cooperation as evidenced by the ratification of the Southern African Development Community (SADC) Treaty. While respecting national sovereignty, the SADC Treaty encourages the development of economic, social and cultural ties across the region and recognises that in addition to people, natural resources and ecosystems transcend national borders.

Several of the SADC Technical Co-ordination Units and their protocols address issues that are relevant to transboundary natural resource management. In particular, the Draft SADC Wildlife Sector protocol calls for ?Member States to promote the cooperative management of shared wildlife resources and wildlife habitats across international borders. While fostering regional cooperation, SADC is not an implementing body and as such cannot direct or enforce implementation of regional policies. Likewise, in regard to wide participation in several international conventions (in particular, United Nations (UN) Conventions on Biological Diversity and Combating Desertification, of which all SADC countries in this study are signatories), regional cooperation is called for rather than mandated and enforced.

Individually, South Africa, Malawi, Mozambique and Botswana have developed policies that encourage some form of transborder natural resource management. The most notable legislation is that between South Africa and Botswana in the recognition of the Kagalagadi Transfrontier Park (formerly the Kalahari Gemsbok National Park, RSA and Gemsbok National Park, Botswana). At the same time Botswana's policies on veterinary controls measures act as a dis-incentive for TBNRM activities in other parts of the country.

With differing levels of authority, Botswana, Mozambique, Namibia, South Africa, Tanzania, Zimbabwe, have all enacted policies or laws to devolve some aspect of control over land and resource use to local groups. Thus, despite the wide regional need for TBNRM, the majority of initiatives for TBNRM have developed locally between communities, communities and protected area managers, and between protected area managers. Where tenure and user rights have not devolved to local authorities or users, TBNRM activities are hindered.

Economic Environment - Within SADC countries, the tourism potential is very high and compared to global growth rates, relatively under-exploited. TBNRM activities offer attractive opportunities to the tourism industry in terms of employment opportunities and generation of foreign exchange. Appropriately managed nature-based tourism can be compatible with conservation and can generate funds needed to manage protected areas as well as provide income and opportunities to local communities. Much of the success of TBNRM projects is dependent on increasing levels of nature-based tourism.

Both the private sector and NGOs have long-term interest in tourism and conservation and are generally interested in the expanded advantage of TBNRM activities. However, region-wide investment, including investment in TBNRM activities, may be difficult to obtain due to instances of political instability, high rates of inflation and heavily subsidised (and often non-sustainable) farming. Disproportionally large economies (e.g. South Africa) may act as a constraint in fostering growth in regional integration of economic activities.

Engaging the private sector and NGOs in support of TBNRM activities is, in part, dependent on fair and equitable treatment of local communities, and on the development of a national and international enabling environment conducive to investment in TBNRM sector.

Current TBCA activities in Southern Africa - Within the SADC region, informal collaboration among neighbouring conservation areas has existed several times. This collaboration may occur for years. For example informal collaboration between Gemsbok National Park in Botswana and Kalahari Gemsbok National Park in South Africa started in 1948. Informal cooperation may occur on a number of levels including complimentary fire control regimes, tracking of poachers and management of certain key species. These relationships may continue for years but are extremely sensitive to personnel changes and shifts in policy.

Formal approaches generally follow informal agreements. For example Botswana and South Africa will soon sign a formal bilateral agreement to form the Kgalagadi Transfrontier Park (formerly Kalahari - Gemsbok parks). Other TBCAs such as the Drakensburg/Maloti Mountains on the South Africa/Lesotho border are in the process of developing formal bilateral agreements. A number of other TBCAs are either underway or proposed.

There are a number of different types of TBCA and TBNRM projects within southern Africa. Until recently they occurred on an individual, ad hoc basis with relatively little communication between different initiatives. There has been very little sharing of lessons learned and

experiences. Dialogue has greatly increased in the last few years due to the establishment of the Peace Parks Foundation, the holding of an international meeting on Peace Parks in Somerset West in 1997, and the formation of the Southern Africa Sustainable Use Specialist Groups working group on Transfrontier Conservation Areas.

Donor support of TBNRM activities is generally "organised/arranged" bilaterally, however there is a growing emphasis on regional programs. In particular, The Global Environment Facility (both WB and UNDP), USAID RCSA, and SIDA currently operate regionally. The majority of other donors are shifting towards supporting regional programs. The GEF is directly involved in several ongoing TBCA activities. In addition to this study, USAID/RCSA is involved in regional management of transboundary water sources. Many bilateral donor agencies have integrated projects in NRM in more than one country, as well as directed bilateral support of NRM activities. Many NGOs are involved in TBNRM activities of which the Peace Park Foundations is addresses transfrontier conservation issues

Benefits and Constraints in the process - The development and management of TBNRM activities is both fostered and constrained by a variety of factors within the public and private sectors. Regionally, SADC has a mandate to promote TBNRM and regional cooperation. However, lack of resources and multiple sectors within SADC may limit effectiveness.

On a national levels TBNRM activities lead to greater benefits in resource management and protection. Politically TBNRM initiates the potential for regional conflict resolution. However, differences in capacity, commitment and national policy are strong constraints to formalisation of Transboundary agreements. In particular questions of national sovereignty, security (including veterinary disease issues), as well as high transaction costs may act to inhibit forward momentum in forming multi-national policies and agreements.

TBNRM fostered growth of the private sector is extremely "politically correct" and as such can draw international investment and donation. Broader transborder cooperation will lead to greater possibilities for the freer movement of people, goods, services and money. However, in this sector in particular the constraints are many. Some of these constraints are restrictive financial policies, insufficient devolution of authority to community groups, barriers to free trade and restrictive government veterinary policies.

Many communities already benefit from CBNRM activities and can use these as a foundation for TBNRM. Successful TBNRM activities stand to benefit local communities through a wide range of factors including: improved long-term security and welfare, increased economic options, improved relations with government sectors, increased status, and improved ecosystem management. While the benefits are great, constraints in forming TBNRM are also very strong. These include: weak existing devolution of tenure and user rights to communities, confusion and conflict between governance and tenure, as well as the possibility community benefits being usurped by larger entities (NGOs, national interests, ecological emphasis).

The information detailed above was obtained as a result of consultation with numerous stakeholders both within and outside the southern African region. The combined information indicates that democracy, sustainability and efficiency are the three general or fundamental assumptions or doctrines necessary for the TBNRM process.

Democracy calls for the devolution of authority and participation of all stakeholders. The process needs to be inclusive, with stakeholders developing trust in the process and between each other. The process must proceed with equity or impartiality, transparency

and accountability, and with respect to the needs of sovereignty of all individuals, organisations and nations. Progress is demand driven and actions should be based on client needs.

Principles of sustainability require attention to the ability of ecosystems to adapt, fluctuate and survive. Use of natural resources must be sustainable and support environmental stability. Continued TBNRM development must have sustainable financing and should, where possible, build on existing resources and institutions. The process needs to be process oriented and requires time and patience, and should progress with adaptive management to shifting conditions. TBNRM development evolves and requires recognition that situations differ and are unique. Stakeholders need to be involved throughout and the process needs to be responsive to stakeholder initiatives.

Efficiency dictates that transaction costs be minimised and must be lower than the sum of the perceived or desired benefit. The process must promote synergy and build partnerships such that the whole is greater that the sum of it parts.

A wide range of activities are presented to assist the TBNRM process. Activities should focus on the need to: acquire information required to make informed decisions; develop skills to strengthen the foundation and foster the process; identify and broaden the authority to make decisions and manage the process; develop the enabling policy and legal environment; and, develop and strengthen the human, organisational, infrastructure, financial, and material resources to move the process forward.

1. Introduction

"Regional cooperation is not an optional extra; it is a matter of survival."

(SADC Policy and Strategy for Environment and Sustainable Development, ELMS, 1993, p.3)

1.1 Objectives and background to the Transboundary Study

1.1.1 Objective of the study

The **objective** of the study was:

to conduct an assessment and preliminary analysis of issues, approaches, and targets of opportunity related to the development and management of transboundary conservation areas (TBCAs) in Southern Africa.

1.1.2 Geographic Scope of the Study

Geographically the study covered all mainland Southern African Development Community (SADC) countries except Democratic Republic of Congo (i.e. South Africa, Lesotho, Swaziland, Mozambique, Zimbabwe, Botswana, Namibia, Angola, Zambia, Malawi and Tanzania) (see Map1.1.1).

1.1.3 Background to the study

Support for this study came from USAID's Regional Center for Southern Africa (the RCSA). USAID/RCSA has a Special Objective (SpOA) focused on increasing regional capacity to manage transboundary natural and wildlife resources. The first two years under this objective are intended to be largely exploratory with an emphasis on clearly defining an appropriate role for the RCSA in this highly complex area of involvement.

This strategic planning exercise will be used for the following purposes:

- to provide a primary basis for USAID to develop a proposed set of co-ordinated program activities relating to the development of a *regional strategy* on TBCAs,
- to provide important *background information* for regional discussions on TBCAs and wildlife resources, and
- to serve to *define an appropriate role* for the RCSA in this field.

The Biodiversity Support Program (BSP), a USAID-funded consortium of World

Wildlife Fund (WWF),The Nature Conservancy and World Resources Institute, managed the study for RCSA. The study was implemented by a team of consultants, consisting of:

John Griffin	Team Leader: Institutional, Policy and Legal Analyst
	David Cumming Conservation Biologist/Park Management Specialist (WWF SARPO)
Simon Metcalfe	Sociologist
Mike t' Sas-Rolfes	Economist
Jaidev "Jay" Singh	Global Review Consultant
	Mary Rowen USAID Liaison and Technical support (AAAS Fellow, USAID)
Ebenizario Chonguica	Angola Consultant (IUCN Mozambique).

GIS support was provided by WWF SARPO (Southern Africa Regional Programme Office). Peace Parks Foundation (PPF) undertook a literature collection and established databases on TBCA literature and regional contacts. Zimbabwe Trust provided administrative and logistical support in the region.

Map 1.1.1 SADC Countries and Capital Cities of the TBCA Study

1.1.4 The study process

The Study has consisted of: individual consultations in the region with various stakeholders; a review of relevant available literature; consultations with World Conservation Union (IUCN) members at the Regional IUCN Meeting (September, 1998); development of draft papers on specific topics; circulation of draft papers for comments; small consultative meeting with stakeholders from around the region (October 19-20, 1998); further circulation of draft papers for comments; a consultative meeting with SASUSG members (November 24, 1998); presentation of Interim Findings and Recommendations to USAID RCSA - December 4, 1998; a large consultative meeting with stakeholders from around the region (December 10-11, 1998); development of a draft final report. Following circulation of this report, comments will be incorporated before production of the final report.

1.2 Clarifying terminology: TBCA and TBNRM

1.2.1 TBCA and TFCA

The study's statement of work refers to cross border focus areas as "transboundary conservation areas", or TBCAs. The original definition used for TBCAs drew on the previous definition of Transfrontier Conservation Areas, or TFCAs, used by the World Bank. No real distinction exists between the terms TBCA and TFCA, and they are used interchangeably in the region and in the literature. Boundary and frontier are synonymous words. The only difference is that frontier can also mean the outer limits of knowledge or achievement. Therefore, the only distinction is the connotations that these words may hold for certain individuals. Hence, in the study the definition for the two remained more or less the same as the World Bank's earlier definition:

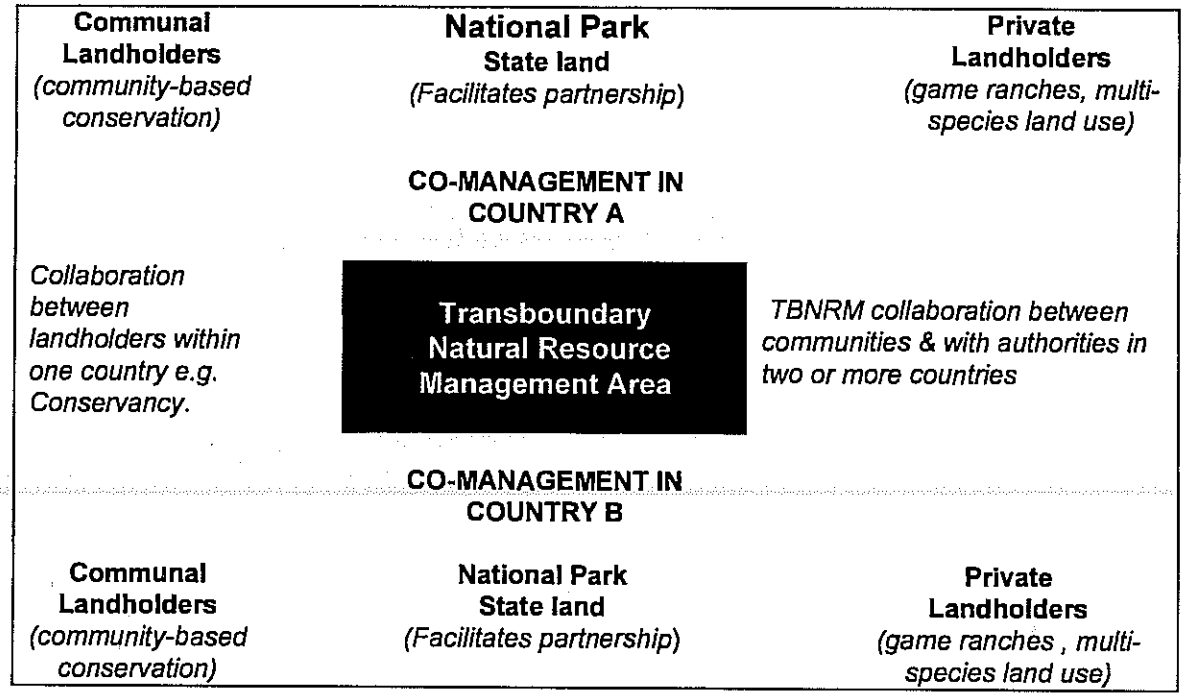
> *"relatively large areas, which straddle frontiers (boundaries) between two or more countries and cover large-scale natural systems encompassing one or more protected areas."*
>
> (World Bank, 1996)

Over time, the regional discourse on TBCA/TFCA has expanded and the above definition has been questioned for the following reasons:

- "Relatively large" is an undefined and subjective measure; do the areas have to be large to be considered transboundary?
- "Between two or more countries" is limiting; in some places in South Africa, transboundary initiatives are underway between federal states. Boundary is defined as something that marks, fixes or forms a limit or territory, the margin.
- A "large-scale natural system" is not an absolute concept – i.e. it is often hard to define such system boundaries (although there is probably wide consensus on what might constitute such a system). Again, does it have to be large?
- Does it have to encompass a protected area? Conventionally, a "protected area" is an

area of land officially set aside by a government for the purposes of ecological or cultural conservation; such lands are generally owned and managed by the state. However, there are instances of private or communally-held land that is managed for conservation purposes. Where two such areas are linked across an international boundary, the results may be the same as any formal TBCA, but the area is excluded by the above definition. The concept of "broader multiple use" fails to come across clearly in the definition. In addition, there is some concern in the region that the concept of conservation area or protected area is too limiting and that the words 'conservation' and 'protected' carry with them connotations of maintaining and even 'preserving' the existing situation or condition.

The situation is illustrated below:



1.2.2 TBNRMA and TBNRM

Out of the discourse, a new term has been coined - Transboundary Natural Resource Management Area (TBNRMA):

> *"An area in which cooperation to manage natural resources occurs across boundaries."*

These boundaries can be international, or they can occur within a country across provincial borders. The boundaries are usually associated with political boundaries, but they can also be boundaries between different types of land holdings or use areas. Area is defined as range or extent of something or concept. TBNRMAs are especially appropriate where a (major) ecosystem extends across the boundary (i.e. the political territory of one or more states or provinces). There might also be a sense of shared resources or ecosystems.

The process itself is called Transboundary Natural Resource Management (TBNRM) and is

defined as follows:

> *"any process of co-operation across boundaries that facilitates or improves the management of natural resources (to the benefit of all parties in the area concerned)."*

The emphasis here is on the process, not the geographic area. Hence, if it serves the function of TBNRM, then it is a TBNRMA. A TBNRMA exists as soon as there is any sort of TBNRM activity represented by some sort of institution (be it a contract, protocol, management plan or communication forum, formal or informal).

1.2.3 TBNRM and a holistic approach to management

Taken further, the TBNRM concept could incorporate the overall concept of natural resource management (NRM) required across all sorts of "boundaries", in support of a bioregional, biosphere or ecosystem management approach. This would be in keeping with the growing recognition that traditional ideas of park, or protected area, boundaries as distinct lines is inappropriate and unrealistic. Instead, there is a need to cooperate with surrounding land owners, users, and managers. Cooperation needs to exist between the private, public and community sectors. TBNRM is not a static concept; rather it is an ongoing process, not bound by any particular time or space constraints, and can take place to varying degrees (see Box 1.2.3).

Box 1.2.3: Levels of the TBNRM process

The extent to which transboundary co-operation and management takes place can vary. There are at least three distinctly different levels of TBNRM:

Level 1 – Local collaborative (transboundary) natural resource management.
At this level, management of wildlife and natural resources (ecological management) is co-ordinated across boundaries. Typically, wildlife would be free to move across these boundaries without restriction.

Level 2 – Local collaborative people management.
This level entails the removal of restrictions that prevent people from crossing boundaries within a specified TBCA. There may be a need for some national policy changes to allow this to occur, but the emphasis would be local.

Level 3 – Harmonisation of national policies and legislation.
This level entails changing and harmonising relevant national laws and policies to facilitate the TBNRM process. This is the level that institutions such as SADC ultimately hope to achieve. However, it is important to note that political and economic costs increase considerably as one moves from level to level, and most existing initiatives are still grappling with level 1.

For this study, the term TBNRM will be used predominantly when referring to the region. However, at times, like in the following section, which refers to global lessons learned, the term TBCA will be used. In addition, at times TFCA is used when it is the specific terminology used by a project or area. It is hoped that over time, one term will come to be used in the region.

1.3 An overview of this report

With the understanding that the overall objective of the study was to conduct an assessment and preliminary analysis of issues, approaches, and targets of opportunity related to the development and management of trans-boundary conservation areas (TBCAs) in Southern Africa, this study report is designed to:

- **Present a review of lessons learned in transboundary park and TBCA development and management world-wide** (section 2). This includes a review of the rationales for TBCAs, including ecological, political, cultural, economic and institutional rationales.

- **Present an overview of the region in relation to TBNRM** (section 3). In this section, the general situation in the Southern African region is presented. The sections begins (3.1) by describing the natural resources in the region and the predominating land use forms, especially in the marginal lands in border areas. The discussion then moves to the major stakeholder group residing in these areas - "local communities", and goes on to describe these stakeholders and the development and importance of the community based natural resource management (CBNRM) movement (3.2). In particular, the section highlights how TBNRM can be a natural next step for CBNRM, if the communities are a genuine part of the transboundary discourse. One of the critical elements of TBNRM is the devolution of authority and the next section (3.3) reviews the policy and legal frameworks that might hinder or support the TBNRM process. Organisational aspects are reviewed in section 3.4, followed by a review of the general economic situation (section 3.5) which might encourage or inhibit the TBNRM process. Finally there is a review of what has already happened in the region in the area of TBNRM (section 3.6), including donor assistance.

- **Describe the constraints and opportunities to the development and management of TBNRM** (section 4) from the viewpoint of three of the major stakeholder groups: the public sector (4.1), the private sector (4.2) and the community level (4.3).

- **Identify the specific principles that need to be followed and recommendations for future TBNRM activities** (section 5).

2. Global lessons learned in TBCA Establishment

In this section, issues pertaining to the benefits and problems in setting up TBCAs are presented. Where illustrative, examples from TBCAs around the world are briefly discussed. The section ends with a list of the key lessons learned.

2.1.1 History

In 1932, the first TBCA was established as an international peace park that linked the Glacier National Park in US to the Waterton Lakes National Park in Canada. Prior to the Glacier-Waterton International Peace Park, Poland and Czechoslovakia signed the Krakow Protocol in 1925 to set the framework for establishing international cooperation to manage border parks (Thorsell, 1990). The first of these parks were not established until after the Second World War. The post-Second World war period saw the number of transboundary parks grow; however, the pace picked up during the 1970s and 1980s when most of the TBCAs were established. By 1997, 136 existing and potential TBCAs straddled 112 international borders in 98 countries (Zbicz and Green, 1997). Please refer to Appendix 2 for a global list of adjoining protected areas (Zbicz 1999).

The increasing emphasis on TBCAs marks a conceptual shift among social and political institutions away from creating large strictly protected national parks towards establishing regional multiple-resource areas for use by local communities along national borders (Hanks, 1997). The TBCA concept lends itself to the incorporation of such innovative approaches as biosphere reserves and a wide range of community based natural resource management (CBNRM) programs (World Bank, 1996). These innovations may be "as old ideas with new opportunities". TBCAs allow for the scaling up of traditional protected areas with benefits spread over larger areas and more communities with potentially significant positive political and economic gains.

2.1.2 Ecological aspects

International border areas contain some of the most biologically intact ecosystems in the world, many of which are located in remote and inhospitable areas (Westing, 1998; Griffiths, 1995). The remoteness of many borderlands, and the fact that they often split what should be functioning ecological units, make them good candidates for conservation areas. This is evident in the number of national parks or game reserves along international borders especially in Africa (almost 40%, 76 out of about 200 of the national parks, 35 of 109, 32% have a national parks on one or both sides, Griffiths, 1995)

One of the most striking examples of shared resources is that of shared watersheds. Of the 15 largest watersheds, the four that occur in the largest number of nations are in Africa (Table 2.1.1). Together these 15 watershed areas cover 26% of the global land surface (Blake, 1993) and serve to illustrate the need for regional and multi-national cooperation to effectively and sustainably manage transboundary resources.

Table 2.1.1 The 15 Largest Watersheds in the World (sorted by # of Watershed Nations)

Watershed	*Watershed Area (million hectares)*	*Length (kilometres)*	*Number of Watershed Nations*
Niger	220	4200	10
Congo (Zaire)	372	4700	9
Nile	303	6650	9
Zambezi	142	3500	8
Amazon	587	6400	7
Ganges-Brahmaputra	160	2900	5
La Plata	320	4880	5
Amur	190	2820	3
Mississippi	325	6020	2
Ob	301	5410	2
Saint Lawrence	128	4000	2
Yenisey	253	5540	2
Lena	249	4400	1
Mackenzi	184	4240	1
Yangtze	196	6300	1

Source: Blake (1993).

The ecological advantages of TBCAs are generally no different than those that occur with an increase in land area under ecologically sustainable management. The specific advantage of TBCAs is that where international boundaries have divided ecosystems, river basins, and wildlife migratory routes, formation of TBCAs can re-establish key ecological functions previously disrupted by artificial limitations imposed by political borders.

One of the most visible negative effects of divided ecosystems is the disruption of nomadic and migratory wildlife movement patterns (World Bank, 1996). Populations with hampered migration patterns include: elephant populations along the South African and Mozambique border (Tembe Game Reserve) that are prohibited from maintaining their migratory routes between the countries by electric fences (World Bank, 1996; Russell, 1998); elephant and wildebeest populations whose ability to search for water have been severely hampered by fences along the borders between and Botswana and Namibia; and Marco Polo sheep and snow leopard seasonal movement patterns that have been jeopardised by increased poaching, livestock grazing and insurgency in the Central Asian mountains (Jackson and Ahmad (ed.), 1995). A good example of how a TBCA has alleviated such problems is the Ibex that migrate seasonally between the Gran Paradisio and Vanoise National Parks in Italy and France. The ibex were protected in their winter range in their Italian Alps habitat in the Gran Paradisio but were not protected in their summer range across the border in France until the Vanoise was established as a mechanism to protect the ibex's transborder range (Thorsell, 1990a).

2.1.3 Political benefits of TBCAs

Politically, the reasons driving TBCA formation vary considerably and include: improve regional ecological management, increase economic opportunities, decrease cultural isolation, as well as the desire to foster peace in a bilateral and regional framework. TBCAs may provide a mechanism to develop capacity for bilateral cooperation, thereby creating opportunities for further collaboration in other, more politically charged areas.

According to McNeil (1990), TBCAs may be established primarily to build confidence and goodwill between border nations as well as stimulate transboundary cooperation in resource management. Within the fledgling field of environmental security, TBCAs may play an important role by reducing or eliminating the impacts of violence on and over natural resources. Environmental security relates to re-conceptualising national security interests by incorporating the significance of natural resources in the economic, cultural and social development of a nation. Mathews (1989) and Kaplan (1994) show how the effects of environmental degradation on human and wildlife populations can lead to conflict over resources and political chaos. Establishing TBCAs may be considered a first-line of defence to protect regional commons and to cooperatively promote sustainable economic development and peace.

Weed (1994) evaluated five peace parks in order to determine whether they served as important tools in biodiversity conservation as "concrete manifestations" of the new spirit of regional cooperation and conflict resolution in Central America. The parks examined include: La Amistad International Biosphere Reserve (Costa Rica and Panama); the Si-a-Paz or the Planned System Areas for Peace (Nicaragua and Costa Rica); the Trifinio Trinational Conservation and Development Zone (Guatemala, El Salvador and Honduras); the Maya Biosphere Reserve and related protected areas (Mexico, Guatemala and Belize); and the Darien Conservation Zone (Panama and Colombia). He concludes that the process of establishing these peace parks has brought these countries closer than before. As these nations attempt to meet the challenges of regional co-ordination they are talking and exchanging information on various levels that have positive impacts. A significant achievement of the Maya Biosphere Zone is the warming of relations between Guatemala and Belize to an extent that Guatemala has formally recognised Belize's borders.

Similar environmental security implications can be seen in the efforts to create a sustainable transboundary link along the borders of Cambodia, Laos and Vietnam. Although the efforts are primarily to preserve Indochina's remaining natural forests that occur mostly on the borders of these countries, the endeavour also hopes to create trust between the three states. In this context, the "Forum for Transboundary Conservation in Cambodia, Laos and Vietnam" sponsored by WWF and United Nations Development Programme (UNDP) hopes to establish dialogue and transboundary conservation areas along the national boundaries that straddle a powerful symbol of conflict both in the region and worldwide – the Ho Chi Minh Trail (Dillon and Wikramanayake, 1997).

2.1.4 Cultural Implications

Culturally, TBCAs assist in the economic livelihood of indigenous groups whose traditional land areas have been divided by international borders. TBCAs assist in developing policies for the resumption or at least legalisation of cross border movement of tribal groups divided by international boundaries. TBCAs can help rejoin traditional heritage territories and can assist in the preservation of indigenous knowledge. This has great potential in re-establishing tribal customs and building confidence, not only among the border communities, but also between the national governments.

One such example is the La Ruta Maya transboundary program that established an unprecedented four nation cooperative to manage a multinational ecocultural tourism circuit in the Maya region of Central America. This program, first conceived in the 1960s by the Organisation of American States and the International Development Bank, would preserve

the cultural and biological heritage of the once powerful Mayan Empire that spanned southern Mexico, Belize, Guatemala and El Salvador. The potential of this transboundary cultural project is immense, not only in preserving the culture and architecture of the Mayas, but also generating revenues for local communities in this poor region.

2.1.5 Economic implications

Economic incentives exist along the gradient of players involved in TBCA formation. The tourism industry is one of the most directly affected industries. According to World Bank figures, the tourism sector is the second largest income generator in the world after oil. In 1994, global tourism generated an estimated US$ 3,400 billion of gross output of 10% of global Gross Domestic Product (GDP) (World Bank, 1996). TBCAs will create richer opportunities for expanded ecotourism, and may be better able to diffuse tourist concentrations, thereby enabling more high quality "experiences." Care needs to be taken such that economic opportunities are shared among member countries.

2.1.6 Institutional opportunities and benefits from TBCAs

One of the greatest benefits of TBCA formation is the increase in capacity among respective national partner institutions to manage natural resources. Capacity building in less-developed partner nations is also an area where donor organisations need to focus to create a long-term option for sustainable management. This will enable equitable participation of member states in regional meetings. Stronger regional capacity enables better decision making with regard to common ecological problems such as climate change, pollution, Convention on the International Trade in Endangered Species (CITES) issues, and desertification.

One of the clearest benefits of TBCAs is that of "levelling the playing field" among neighbouring states to manage natural resources. An example of this is the TBCA between China and Nepal that spans the Quomolongma National Park in Tibet Autonomous Region and the Langtang National Park, Makulu-Barun National Park and Conservation Area, and Sagarmatha National Park, all of which are located in Nepal; this TBCA creates one of the world's largest network of protected areas across international borders. With the help of The Mountain Institute, informal information exchange began between the two countries. Tibetan officials were able to gain from the expertise of the Nepalese wildlife and park officials to a point where there is now a sustained level of communication between the two nations related to natural resource management, tourism and cultural exchanges (Sherpa, L., pers. comm. to J. Singh 1997).

For all the benefits possible, the formation of TBCAs is neither easy nor rapid. Long-term commitments from both partner nations and donors are necessary to re-evaluate historical perceptions of international boundaries. Some of the factors affecting TBCA formation are outlined below.

2.1.7 Factors that increase and decrease the success of TBCAs

Reasons for success

In most cases the three major factors that influence the establishment of a TBCA are first, broad political support and political will that is necessary for any kind of inter-state cooperative endeavour. The success of efforts to establish "peace parks" in Central America were largely due to the support of political figures, including Heads of State. Moreover, high-level demand to establish a political symbol of cooperation between neighbouring states enhances political support and will to establish TBCAs. Secondly, sustained funding for the variety of components is necessary for building capacity and sustaining the process of building TBCAs. Funding forms the core component of any program and in many instances directly correlates with the amount of political will and support. Third, involvement of international agencies such as NGOs and IGOs greatly contributes to the success of TBCA establishment by providing external sources of funding and support, as well as technical expertise.

The following factors also contribute to the successful establishment of TBCAs:

The TBCA process should encourage broad participation of local communities and the general public. The process should not be seen as a "top down" process, but instead it should be inclusive of, and transparent to, all stakeholders. The process should build on the existing informal relationships between management authorities, community groups, and other groups and individuals. These informal operating systems may lead to more formalised agreements. The process is further assisted where there is already a high level of cooperation between bordering communities, local management authorities, and central government agencies.

Regional organisations and conventions are more effective in establishing TBCAs if driven by local consensus, rather than if directed by donors and third parties. For example, the Specially Protected Areas and Wildlife (SPAW) Protocol in the Caribbean provides a number of key lessons: (1) the Protocol adopts a two-tiered approach, whereby the general and common objectives are agreed upon but implementation is left to each state. Implementation by each state is based on it's level of economic development, resource capabilities and the dependence on the resources; (2) the Protocol aims to facilitate technical and scientific research and mutual assistance without imposing strong obligations; and (3) the Protocol is based on the ecology of the region and the necessary criteria for the longevity of the ecosystem. (de Fontaubert and Agardy, 1998).

Whenever possible, individual TBCAs should have a highly visible "target" species or scenic areas that would benefit from transboundary cooperation. For example, the presence of the endangered snow leopard and Marco Polo sheep and the efforts to protect them are strongly influencing the establishment of a TBCA between Pakistan and China. The "Target" species focus has proved successful in many conservation and reintroduction projects. In addition, Weed (1994) states that designating parts of, or whole TBCAs as World Heritage Sites or Biosphere Reserves demonstrates, to local communities, the global importance of the resources; and instils a sense of pride that has tended to speed up the process. Increased international awareness, as well as increased donor funding, generally follows World heritage designation.

Limiting factors

From the above discussion it is clear that formation of TBCAs is greatly impeded when the process lacks political will and sustained funding. States that have had strained relations for a number of years may not have the capacity or the sustained political will to undertake the lengthy negotiations required for establishing TBCAs. Assistance from NGOs, IGOs and international conventions can significantly reduce these transaction costs by offering a forum for negotiation and funding. In areas where high opportunity costs favour present land tenure patterns it may be difficult for nations to alter consumption of natural resources patterns, especially if a state may not benefit as much from the TBCA as would a neighbouring state.

Additional factors that slow or impede TBCA formation include

Unequal management capacity among neighbouring states. While this does not prevent TBCA formation it should be clear to donor agencies and the partner nation(s) that there may need to be a considerable period of information sharing and capacity building to enable equitable representation among the neighbouring states. In addition, problems may arise where protected areas on either side of a border have different resource management regimes. For example a hunting block may border a strictly protected park. This unequal status raises important, and often difficult to solve, issues related to resource conservation and utilisation.

TBCA formation is difficult where the attitudes and perceptions of local communities are not supportive of conservation efforts. TBCAs must have the support of the local communities as the benefits and costs are usually borne by them first.

Establishing a TBCA is a lengthy and complex process that cannot and should not be forced due to the large numbers of stakeholders involved. Many TBCAs may never get established because of the need for sustained political will over a number of years. Problems may arise with the differing interests and priorities of subsequent governments.

Where language and cultures are different, extensive capacity building and awareness education needs to be carried out for both the official and key members of local communities.

In conclusion, TBCA formation is still a very new concept in which the potential benefits of TBCAs are yet to be realised to make any definitive statements. However, through TBCAs, the potential does exist to foster political cooperation and sustainable cross-border ecosystem management.

3. Overview of the region in relation to TBNRM

3.1 Southern Africa: Natural Resources, Land Use and Conservation in Relation to TBNRM

In terms of evolution, the ecology of southern Africa has been, and continues to be shaped by the dynamic interaction of rainfall patterns, temperature, vegetation, wildlife and people. The rift valley, a dominant feature on the region, connects southern Africa to East Africa and provides a contiguous landscape for the vast diversity of megafauna and flora.

The last two millennia in Africa have been characterised, if not dominated, by human migrations and the invasion of livestock and the very recent explosions of human and livestock populations in the region (**Fig. 3.1**). Livestock first moved into Africa from the Middle East about seven thousand years ago and reached southern Africa about 2,000 years ago (Denbow and Wilmsen 1986, Cumming 1982). During the last hundred years the ecology of southern Africa, along with much of the global land surface, has also been shaped by large scale farming and ranching, mineral extraction, introduction of alien species and diseases, and vast changes in water use and extraction.

This following section focuses on key features of the ecology and landuse changes that have a bearing on conservation issues and the creation of trans-boundary conservation areas in southern Africa.

3.1.1 Environmental Overview

The southern extension of the Rift valley shapes much of the region's topography. From Tanzania to the south, the Rift runs south through Lakes Tanganyika and Malawi to the coast near Beira. A branch extends along the Luangwa Valley and the Middle Zambezi to reach the margins of the Okavango swamps in Botswana.

The narrow coastal plains of Tanzania and Mozambique give way to ranges of mountains which form a saucer like rim on the east coast of Africa and extend southwards to the Cape and northwards along the west coast of Namibia and into the Angolan highlands. The interior of the region formerly held a vast internal drainage basin, giving rise to sedimentary deposits such as the Karoo sandstones and the vast coal deposits in Botswana, South Africa and Zimbabwe. The basin rim has been breached by the Orange River in the south, and the Limpopo and Zambezi rivers to the north, with the remnants of the ancient internal drainage basin now represented by the Okavango drainage basin. (**Map 3.1.1**)

Rainfall patterns in the sub-region change from winter rainfall in the Cape to a single summer rainfall season in the sub-tropics and a dual rainy season close to the equator in the northern half of Tanzania. Mean annual rainfall varies between <100 mm per annum on the west coast to >1,800 mm per annum in the eastern montane regions range **(Map 3.1.2)**. A very high proportion (c. 60%) of the region receives less than 600 mm per annum and thus falls within the semi-arid to arid category, and most (> 75%) the region is sub-humid or drier.

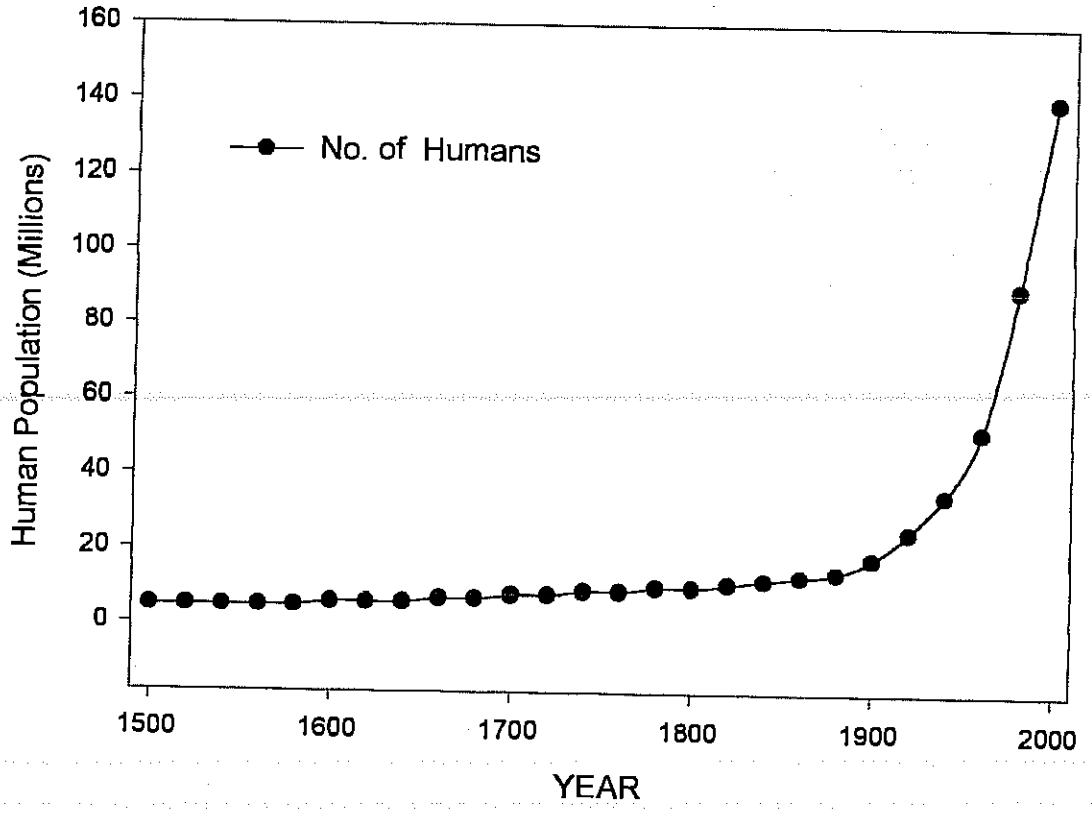
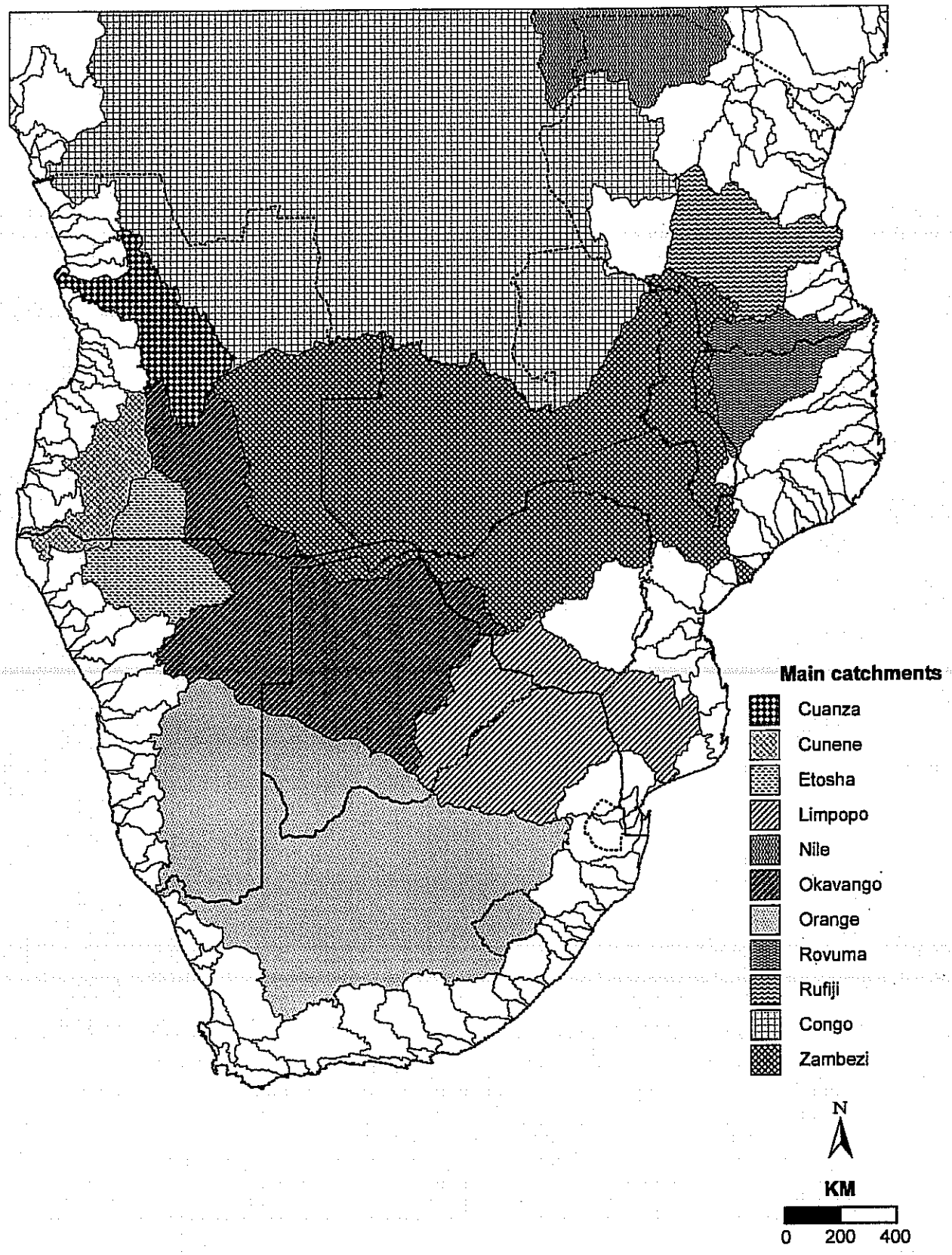
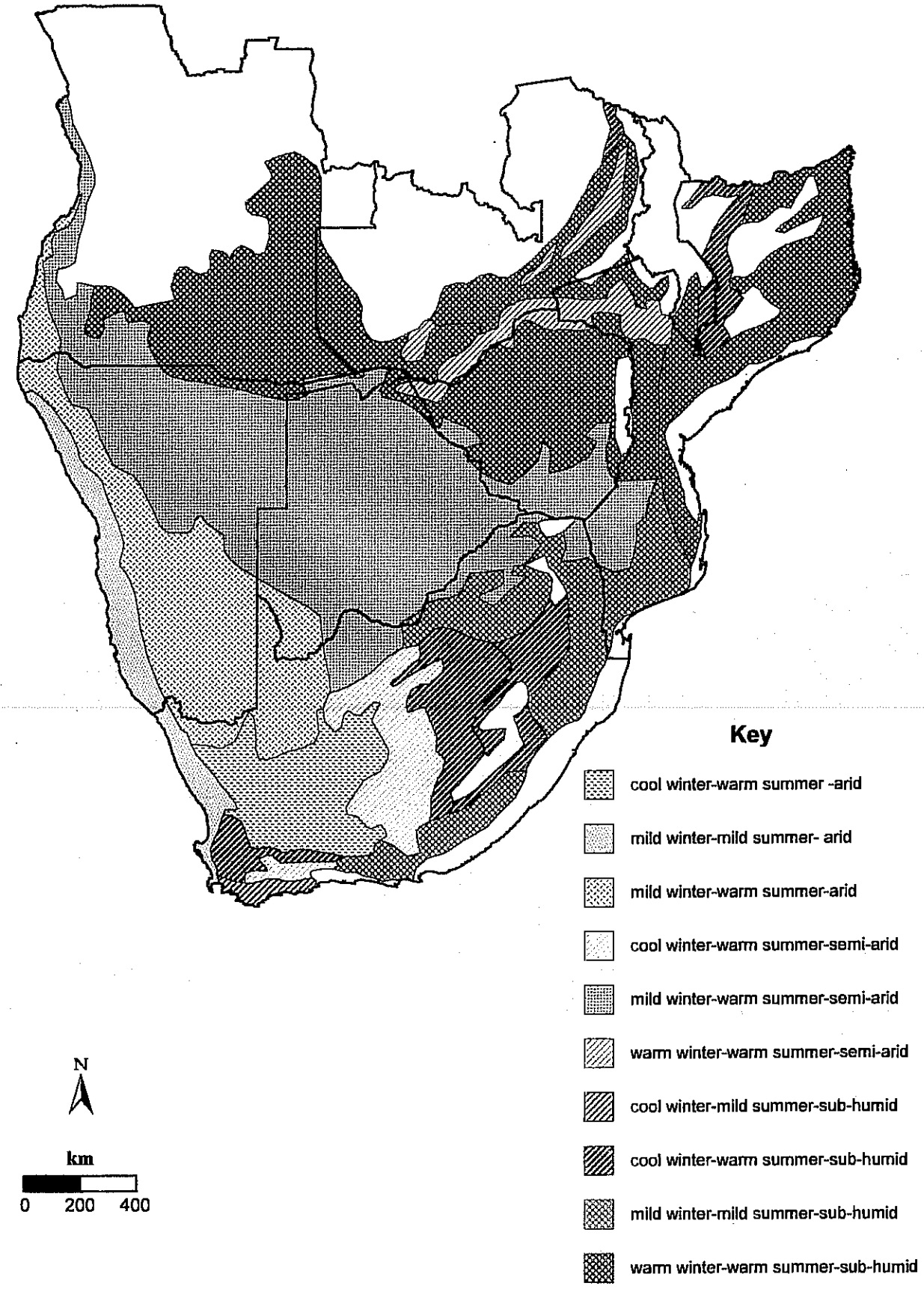


Fig. 3.1 Graph of human population growth in Southern Africa since c. 1500.
(Based on data drawn from McEvedy 1980, and more recent regional data)



Map 3.1.1 Major Drainage Basins of Southern Africa (From FAO-ALCOM, 1997)



Map 3.1.2 Climatic conditions in Southern Africa (Based on UNESCO, 1997)

Rainfall is often highly variable and seasonally unpredictable, one of the most important consequences of which is the highly variable level of food production and financial returns to farmers. Production systems that can buffer the vagaries of weather and its effects on primary production and animal production systems are thus at a premium. Systems based on tertiary service products, such as tourism, rather than primary production of crops or secondary production of meat and milk offer a realistic supplementary or alternative landuse option under variable arid and semi-arid conditions. This general principle is, or should be, an important consideration in landuse policy irrespective of whether areas suitable for wildlife use are adjacent to international boundaries or whether they are an option for TBCAs.

Biodiversity

The "value" of biodiversity of a particular area is generally measured by its species richness (number of species) and by the percentage of endemic species or genera (species found only in one area/region). The vegetation communities of southern Africa are very diverse, ranging from montane, Acacia woodland, mixed woodland, scrub, mixed grassland/ woodland, savanna and arid scrub. Of the twenty vegetation regions in Africa defined by White (1983) ten occur within southern Africa (**Fig. 3.3).** Of these all except the unique *Cape regional centre of endemism (Fynbos) (Region V)* of South Africa occur across international boundaries. Five of the ten regions have high rates of endemism (>=40%, see table below).

Table 3.1.1 Vegetation regions falling within southern Africa and area protected within each region. (Source McKinnon & McKinnon, 1986)

Phytochorial Region (vegetation zone)	Area of Region	Area (km^2) Protected	Percent Protected	Percent Intact	No. species	Percent (%) endemic (of type listed)
II Zambezian	3,939,100	306,435	7.7	57	*8,500	54
IV Somali-Masai	1,990,000	96,288	4.8	52	2,500	50(genera)
V Cape	71,000	12,364	17.0	40	22,000	>80
VI Karoo Namib	692,600	48,510	7	57	3,500	>50
VIII Afromontane	715,000	29,600	4.5	37	4,000	~66
X Guinea-Gongolia/Zambezia	705,000	2,600	0.3	49	2,000	?
XII Lake Victoria Mosaic	224,000	16076	7.7	16	3,000	Few
XIII Zanzibar-Inhambane	336,000	14818	3.9	38	3,000	50% of tree sp.
XIV Kalahari- Highveld	1,223,000	92,839	7.2	38	3,000	?
XV Tongoland-Pondoland	148,000	8926	6.0	46	3,000	40

- flowering plants

From the point of view of TBCAs, important vegetation sites include the Zambezi source area (Zambia/Angola), the Kaokoveld (Angola/Namibia), the Succulent Karoo (Namibia/South Africa), the "middle Rovuma River" (Mozambique/Tanzania), the Maputaland Center (South Africa, Swaziland and Mozambique), the Drakensberg Afro-alpine region (Lesotho/South Africa) and the Chimanimani Mountains (Mozambique/Zimbabwe).

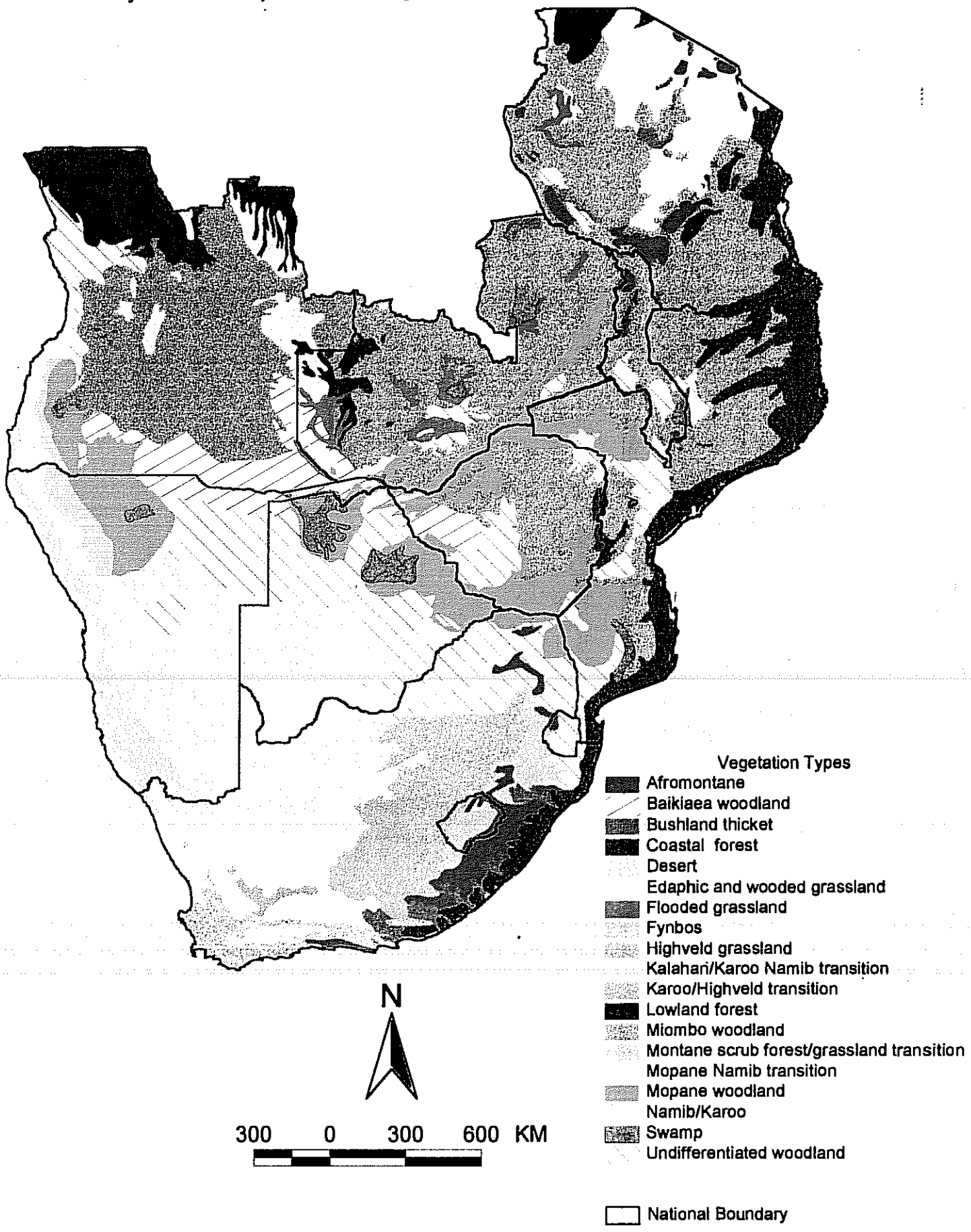


Fig. 3.3 Vegetation map of Southern Africa (Simplified from White,1983)

Analyses of animal species richness at a continental scale have been published for butterflies (Carcasson 1964), passerine birds (Crowe and Crowe 1982), water birds (Guillet and Crowe 1985), plants, primates and ungulates (McKinnon and McKinnon 1986), and mammals (Turpie and Crowe 1994) (**Map 3.1.3**). For butterflies the highest levels of species in Africa occur in the region of Cameroon and, in southern Africa, along the Tanzanian coastal forest. The studies on birds and mammals show the highest levels of species richness occur in Tanzania and the lowest in the desert region of Namibia and the northern Cape Province of South Africa. Combining the broad species distributions for mammals, birds, reptiles and amphibians into a composite indicates that the highest levels of species richness occur along the Afro-montane belt and across into the Angolan highlands.

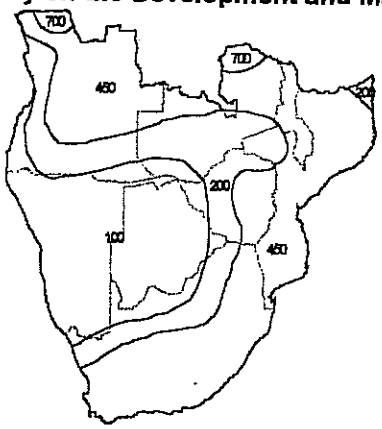
A key issue to emerge from the many studies of species richness distributions of particular taxa is that the "hotspots" for one taxonomic group seldom coincide with those of another (see **Table 3.1.2**). However on a broad scale, within southern Africa, the greatest species diversity is found in South Africa, Tanzania and Mozambique (at least for those groups and criteria included in the analysis), while the lowest levels of diversity occur in Lesotho, Namibia and Botswana (**Map 3.1.4**).

Distribution of endangered and "flagship" species

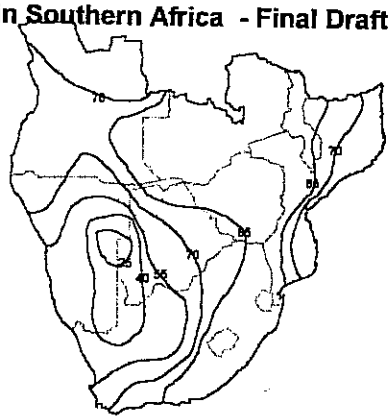
The distribution of certain key or umbrella large mammal species has a bearing, both ecologically and economically, on the development of TBCAs and corridors linking existing protected areas. Reasonably accurate range maps are available for species such as elephant, rhinos, cheetah, wild dog, buffalo and the full range of antelope species in the region (East 1989, Skinner and Smithers 1990). (**Maps 3.1.5, 3.1.6**) In several areas important populations of these species straddle international borders and in some instances movements are constrained by game fences. In most cases these fences have been erected to control animal movements as a component of animal disease control measures to protect the livestock industry and with little, if any, consideration of the ecology or conservation of wild species in these areas (see Section 3.1.5).

Table 3.1.2 Baseline data on species diversity and endemism for Southern Africa.

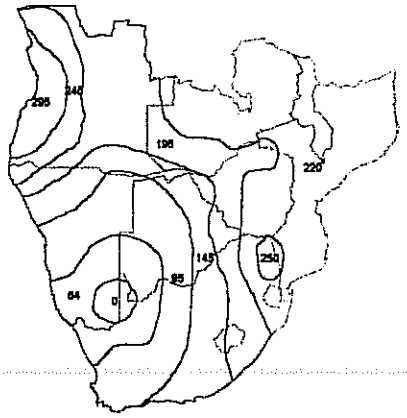
Criteria	Country										
	Angola	Botswana	Lesotho	Malawi	Mozamb.	Namibia	S. A.	Swazil.	Tanzan.	Zambia	Zimbabwe
Area (km2)	1246700	600372	30350	118484	783030	824292	1221040	17366	886040	752614	390245
No. species:											
Mammals	276	154	33	187	179	154	247	47	310	229	196
Birds	872	569	288	630	666	640	774	496	1016	732	634
Reptiles	150	143	50	124	170	140	301	106	273	160	156
Amphibians	80	36	35	69	62	32	95	39	121	83	120
Fish	268	81	8	600	500	97	220	45	250	156	132
Flowering Plants	5000	2000	1576	3600	5500	3159	20300	2636	11000	4600	6000
Total:	6646	2983	1990	5210	7077	4222	21937	3369	12970	5960	7238
Species Density:	5.33	4.97	65.57	43.97	9.04	5.12	17.97	194.00	14.64	7.92	18.55
No of Endemics:											
Mammals	4	0	0	0	2	0	4	0	12	6	2
Birds	0	0	0	0	0	0	4	0	13	1	0
Reptiles	0	0	0	5	1	0	116	0	48	0	0
Amphibians	20	0	2	4	2	2	49	0	40	1	2
Fish	0	0	1	450	400	0	0	0	230	0	1
Fl. Plants	1260	17	2	69	219	45	18000	4	110	211	95
Total:	1284	17	5	528	624	47	18173	4	453	219	100



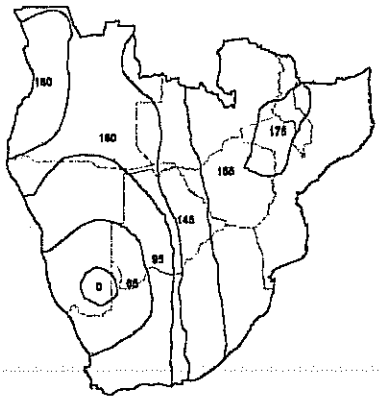
Butterfly species richness



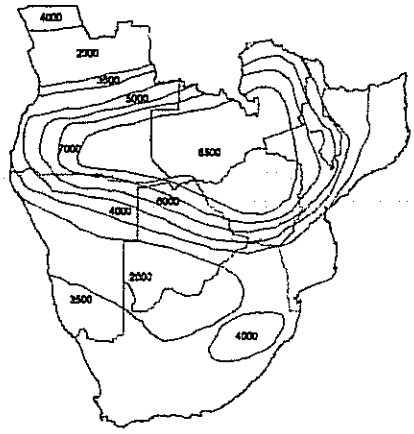
Waterbird species richness



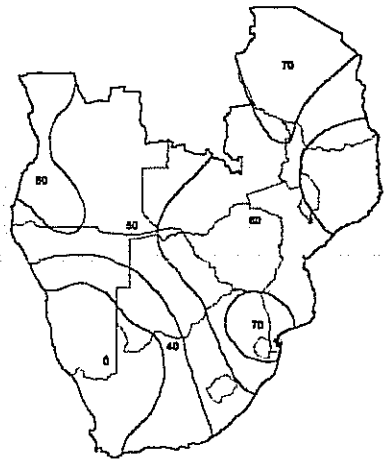
Passerine bird species richness



Non-passerine bird species richness

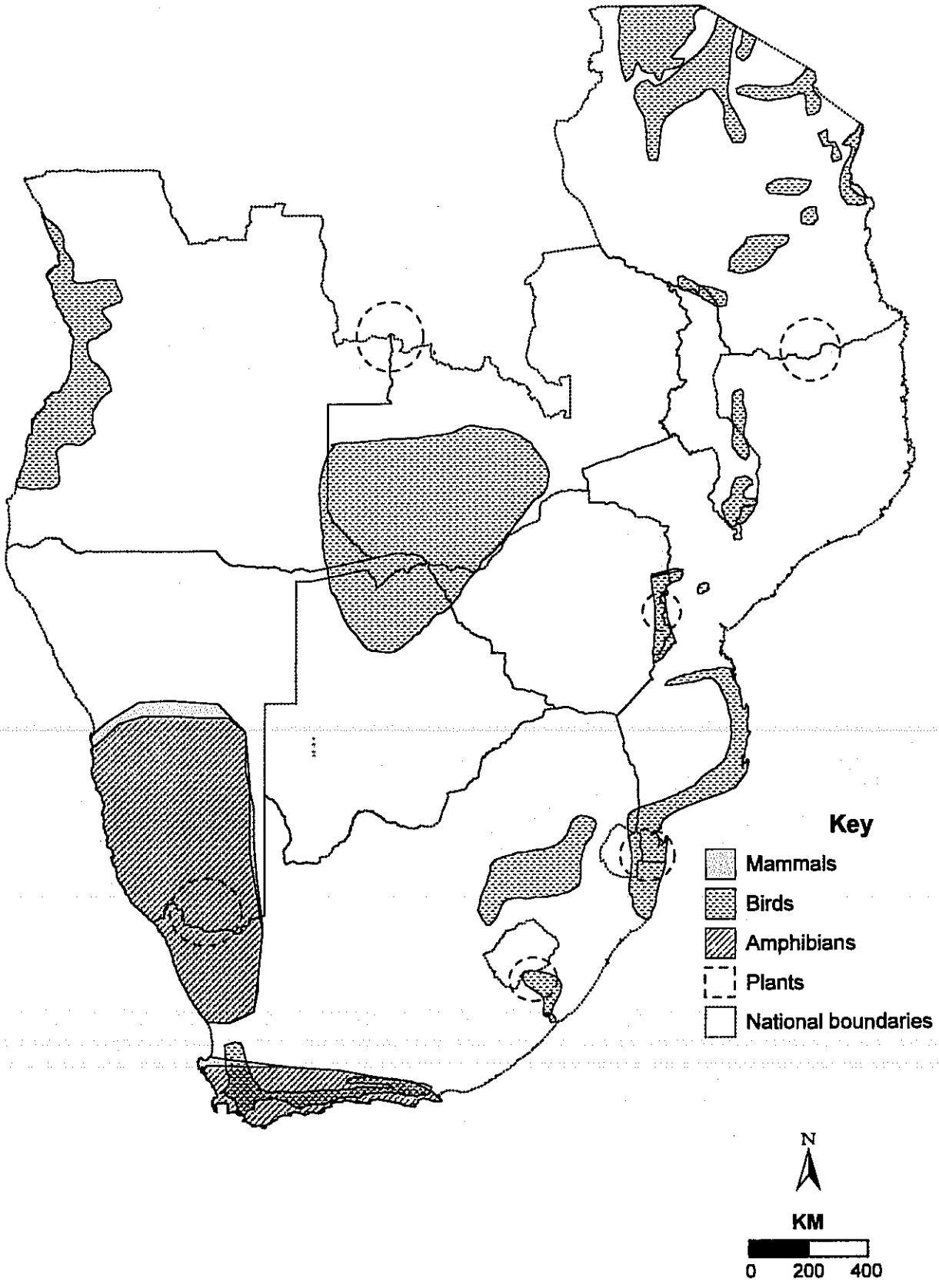


Plant species richness

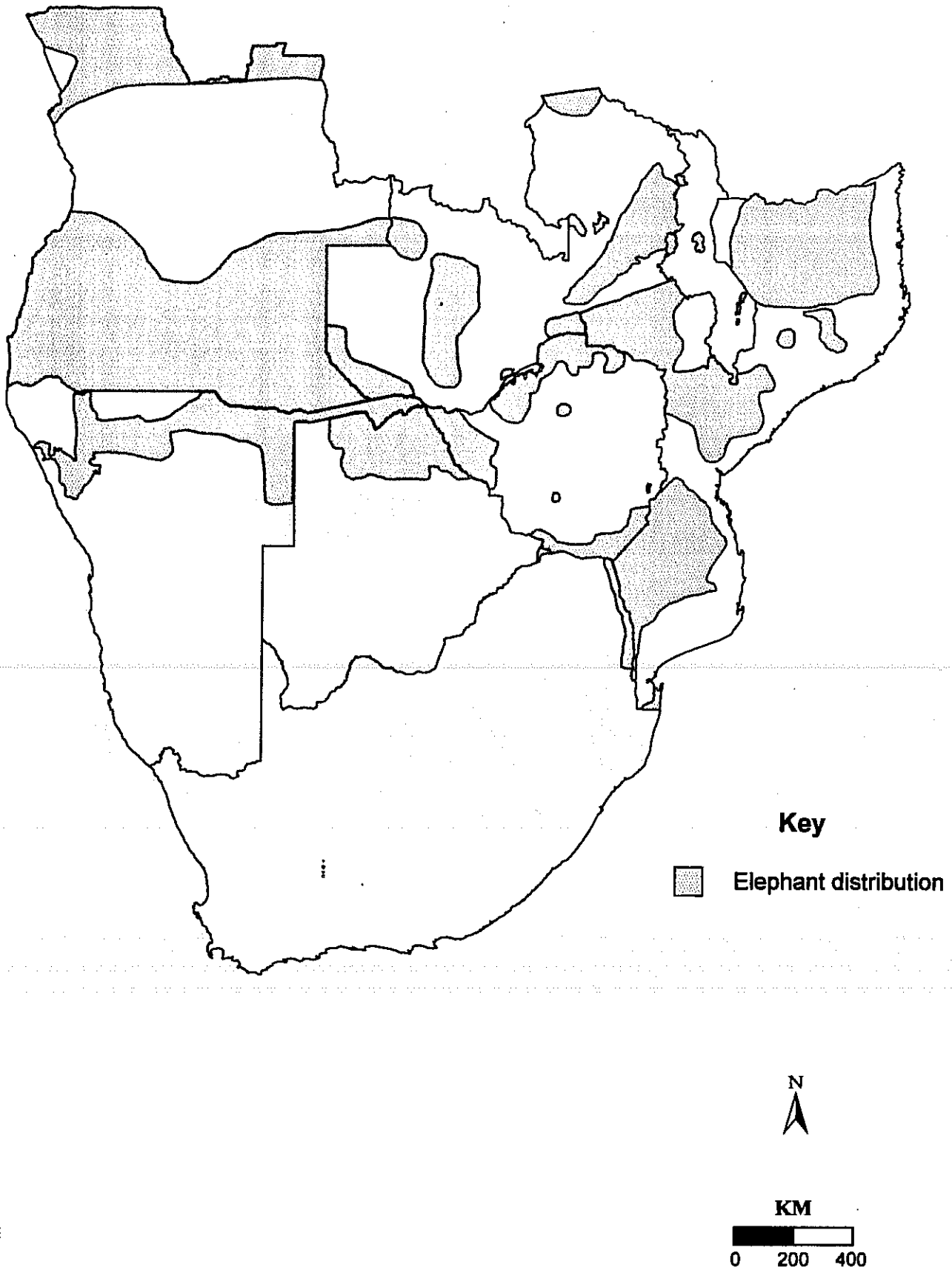


Mammal species richness

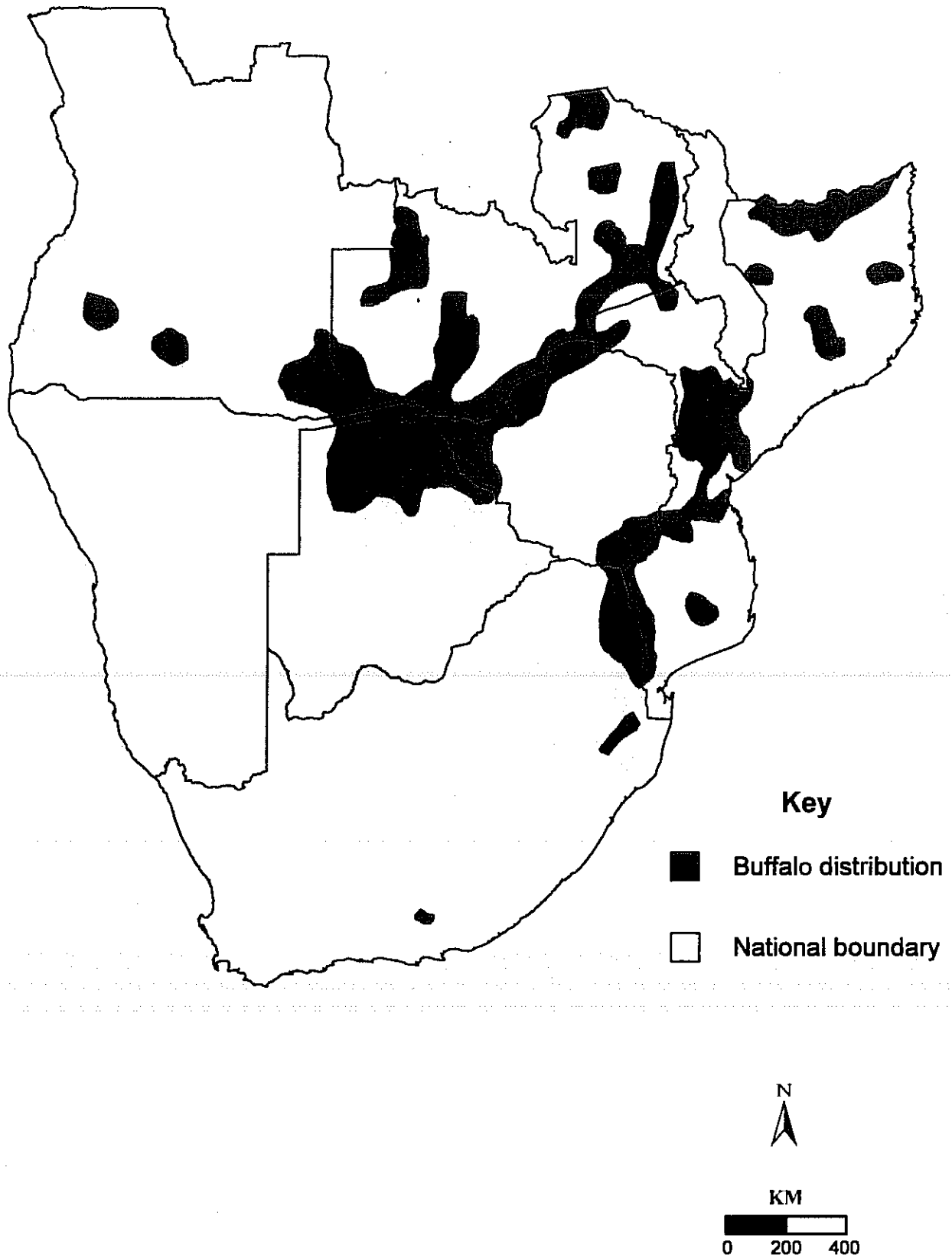
Map 3.1.3 Distribution of species richness for selected taxa. Isolines represent number of species. (Data drawn from Carcasson, Mckinnon & McKinnon, Crowe, Crowe & Turpie, Guillet & Crowe)



Map 3.1.4 Centers of endemism for mammals, birds, amphibians and selected areas of plant endemism on national boundaries. (Compiled and redrawn from Groombridge, 1992, and Bibby *et al* , 1992)



Map 3.1.5 Elephant distribution in southern Africa



Map 3.1.6 Buffalo Distribution in Southern Africa (R. D. Taylor)

3.1.2 Trends in land and natural resource use

Africa has long been shaped by the presence of humans, and the recent human induced species extinction's in mammalian faunas which have occurred elsewhere in the world in the last 50,000 years (e.g. America, Australia, Europe and New Zealand) have not occurred on this continent (Diamond, 1998). Local extinction's are, however, on the increase as human activities (agriculture, forestry, mining, reservoirs, urban development) transform habitats and displace indigenous plant and animal species. The management of arid and semi-arid areas in southern Africa for subsistence cropping and extensive livestock production shows little promise of being sustainable at present, let alone projected, human densities (Jahnke 1982, Cumming and Bond 1991, Cumming and Lynam 1997) despite much recent argument to the contrary. At the same time protected areas are also under siege. Declining and inadequate funding (Cumming, du Toit and Stewart 1990), impaired resources to protect and manage national parks (Leader-Williams 1988, Leader-Williams and Albon 1988), overpopulation of certain species such as elephants that impact on habitats and other species (Cumming *et al*, 1997), and the loss of species due to increasing ecological isolation of protected populations (Soule, Wilcox and Holtby, 1979; Western and Gichohi, 1993) all contribute to the growing list of threats to standard approaches to protected area management. The crux of the issue is whether rural development has to continue to follow the path of transforming land and displacing biodiversity or whether there are alternative paths to rural development, particularly for farmers on marginal lands, which can take advantage of Africa's comparative advantage in its spectacular wildlife. These issues have a direct bearing on TBCAs and this section examines some of the ecological land use and natural resource use trends that have a bearing on these issues. From an ecological and conservation perspective the time to look "beyond parks" is long overdue.

Development of dual agricultural systems

Dominant features of landuse and landuse change in southern Africa during the present century have been rapid human population growth, the establishment of dual agricultural sectors (i.e. widely separated commercial and peasant agricultural systems and services) particularly in South Africa, Namibia and Zimbabwe, the development of single species ranching systems with fenced paddocks and the deployment of major resources in subsidies and veterinary controls to support the livestock industry. Although less land was involved in establishing dual agricultural systems in Angola, Malawi Mozambique, Tanzania, Zambia and parts of Botswana, the process nevertheless resulted in major distinctions between large scale agri-business (plantation) developments and peasant, subsistence agriculture. With ten fold increases in human populations since 1900 combined with low levels of urbanisation and a high dependence on wood fuel, dual agricultural systems have contributed to the impoverishment of small scale farmers and the conversion of large areas of land to subsistence agriculture. Land transformation in South Africa has been described by Downing (1978), Macdonald (1989) and Mentis and Seijas (1993) and the changes in policy and practice in land use in Zimbabwe have been reviewed by Murphree and Cumming (1993). The current areas of land under different types of tenure in the region are summarised in **Table 3.1.3** and in **Fig. 3.2** Land tenure and extensive landuse in the SADC region.

Table 3.1.3 Land categories, human population size and growth, agricultural and energy indicators in Southern Africa

Pop./Dev./Land use	ANGOLA	BOTSWANA	LESOTHO	MALAWI	MOZAMBIQUE	NAMIBIA	S. AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE	TOTALS
Area (Km2)	1,246,700	600,372	30,350	118,484	783,030	824,292	1,221,040	17,366	886,040	752,614	390,245	6,870,533
Land tenure:												
State land (%)	6.6	23.0		17.0	4.1	15.0	4.6	1	14.5	7.9	16.0	10.51
Communal land (%)	88.0	71.0		78.7	93.0	40.0	13.0	60	84.0	89.0	48.6	64.86
Private farm land (%)	5.4	6.0		4.3	2.9	45.0	73.4	39	1.5	3.1	35.4	23.17
Human population (1990):												
Numbers (millions)	10.01	1.3	1.80	7.9	15.5	1.16	35.8	0.8	26.0	7.6	10.1	117.97
Growth rate	2.67	3.51	2.85	3.31	2.65	2.66	2.2	3.4	3.67	3.76	3.15	3.08
Ha per person	12.5	46.2	1.7	1.5	5.1	71.1	3.4	2.2	3.4	9.9	3.9	5.8
Rural Pop. (% total)	71.7	76.4	79.70	85.2	75.2	75	41.5	66.9	70.7	44.4	72.4	62.2
Ha per rural person	17.4	60.4	2.1	1.8	6.7	94.7	8.2	3.2	4.8	22.3	5.3	9.4
Agriculture:												
Arable land (km2)	35,000.0	13,600.0	3200	23,330.0	30,800.0	6,570.0	134,730.0	1800	52,300.0	52,080.0	2,782.0	356192.00
Area under Tsetse fly	419,781.0	3,000.0	0	13,737.0	388,318.0	1,471.0	3,583.0	0	354,416.0	367,137.0	21,366.0	1572809.00
Grazing land	709,612.0	479,819.0	25000	68,795.0	331,662.0	709,125.7	1,026,227.0	15000	479,324.0	273,946.0	316,679.0	4435189.70
Cattle (1,000's)	3,350.0	2,900.0	530	910.0	1,450.0	2,000.0	12,215.0	660	14,000.0	2,400.0	5,800.0	46215.00
Sheep & Goats (1,000's)	1,200.0	965.0	2490	859.0	469.0	8,300.0	36,111.0	362	10,200.0	392.0	1,600.0	62948.00
TLU's per km2	5.2	6.6	50.5	16.9	4.8	6.3	22.3	51.1	35.5	9.2	19.8	14.6
Energy:												
Per Capita Consumption (GJ)	14.9	27.3	?	26.8	26.9	?	?	?	24.5	26.1	33.0	
Wood fuel as % total fuel	77.3	56.1	?	94.3	89.1	?	?	?	91.4	58.3	52.0	

Source: partially updated from Cumming (1991)

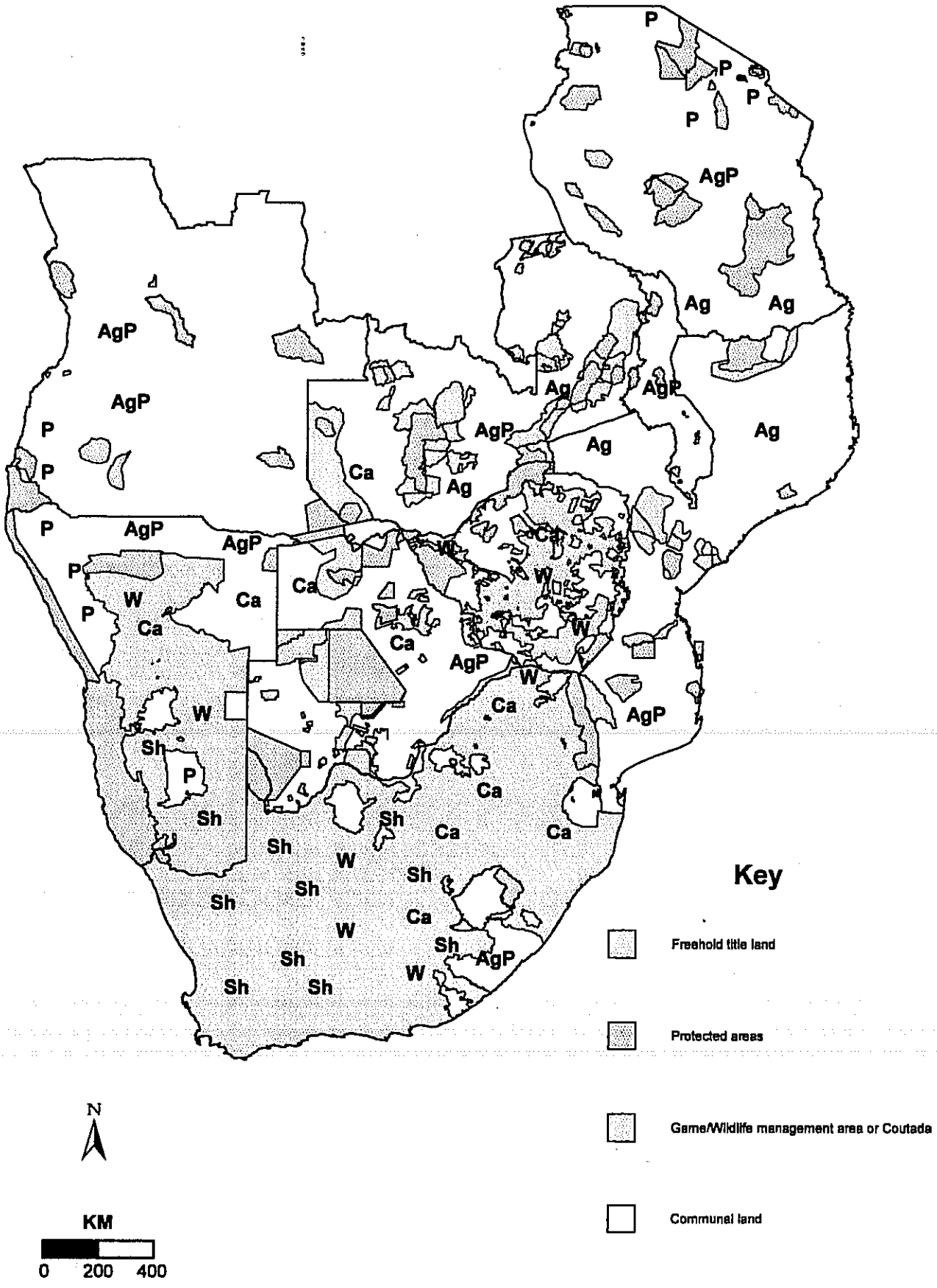


Fig. 3.2 Land tenure and extensive land use in Southern Africa (Redrawn from Cumming & Bond, 1991) AgP = Agro-pastoral; Ca = Cattle; P = Traditional Pastoral systems; Sh = Sheep farming; W = Wildlife ranching.

Trends in crop and livestock production

Human population growth in the second half of this century has been accompanied by declines in indicators of human welfare such as per capita food production. In keeping with the combination of low soil fertility in the more humid parts of the region, low rainfall where soils tend to be more fertile and the generally infertile soils of the region only 5% of southern Africa is under cultivated or permanent crop land. This area is close to the generally accepted level for the region of 5 to 7% arable land and the arable area per person has declined from 0.6 ha per person in 1961 to 0.27 per person in 1993. At a country level, Malawi is the highest at 14% cultivated, while Botswana is the lowest at 0.7%. Only 0.28% of the region is under irrigation, the highest level occurring in Swaziland at 3.9% followed by South Africa at 1.1 %. The potential for expansion of arable land, other than into marginal areas, is limited.

The production of cereals and root crops (maize, sorghum, millet and cassava which form the primary staple food) have increased since 1961 but have not kept pace with population growth. Much of the problem relates to inappropriate landuse and subsidies to farmers (both peasant and commercial) to cultivate marginal lands. In addition many of the major cash crops (tobacco, cotton, copra, coffee, tea, citrus, grapes, bananas, palm oil, and sugar) are mostly grown in fertile areas with higher rainfall or under irrigation and under large scale commercial operations. These operations often require increased water usage and conversion of forest (often key watersheds) into agricultural land. For example, the extension of large and small scale tobacco farming involving estates and tenant farmers in Malawi and Tanzania has greatly increased the rate of land clearance and wood fuel harvesting (to cure the tobacco) over the last two decades (Temu 1979, Misana et al 1996)

Within southern Africa as a whole there are now fewer livestock units than there are people in the region - i.e. for each person in southern Africa there is less than one livestock unit. Furthermore the overall number of livestock in the region has shown little growth over the last three decades (**Fig. 3.4**). The very real and serious constraints to livestock production in the region are linked to fundamental aspects of soil nutrient status and quality of food for livestock. European livestock production is nearly 20 times greater than that of southern Africa in regard to levels of meat and milk production per animal and per person. This disparity in production efficiency serves to emphasise that southern Africa's comparative advantage in world markets clearly does *not* lie in domestic livestock production (Cumming and Bond, 1991 and **Fig. 3.5**). Nevertheless domestic animals dominate the southern African landscape and the biomass densities of wild ungulates are about one tenth of those of domestic livestock for nearly all countries in the SADC region (**Fig. 3.6**)

Given the declining fortunes of livestock production in much of southern Africa it is not surprising that where appropriate institutions exist for farmers to turn to wildlife as a land use this option has been increasingly used (Cumming, 1991a, 1995). Countering this view are arguments that livestock have an intrinsic cultural value which does not extend to game animals and which accounts for high stocking rates and low levels of commercial exploitation of livestock by communal farmers. While strong cultural traditions in respect of livestock do exist in many ethnic groups in the region the persistent myths surrounding the "Bantu Cattle complex" (Herskovits 1926) as an explanation for livestock keeping and management practices have been discredited (e.g. Mtetwa, 1978, Doran *et al* 1979, Low et al 1980, Steele, 1981). Past and current livestock practices in communal farming areas of the region reflect financially efficient and risk averse strategies at the individual and household level under prevailing national economic and agricultural policies (e.g. Buchan, 1988, Barrett, 1992).

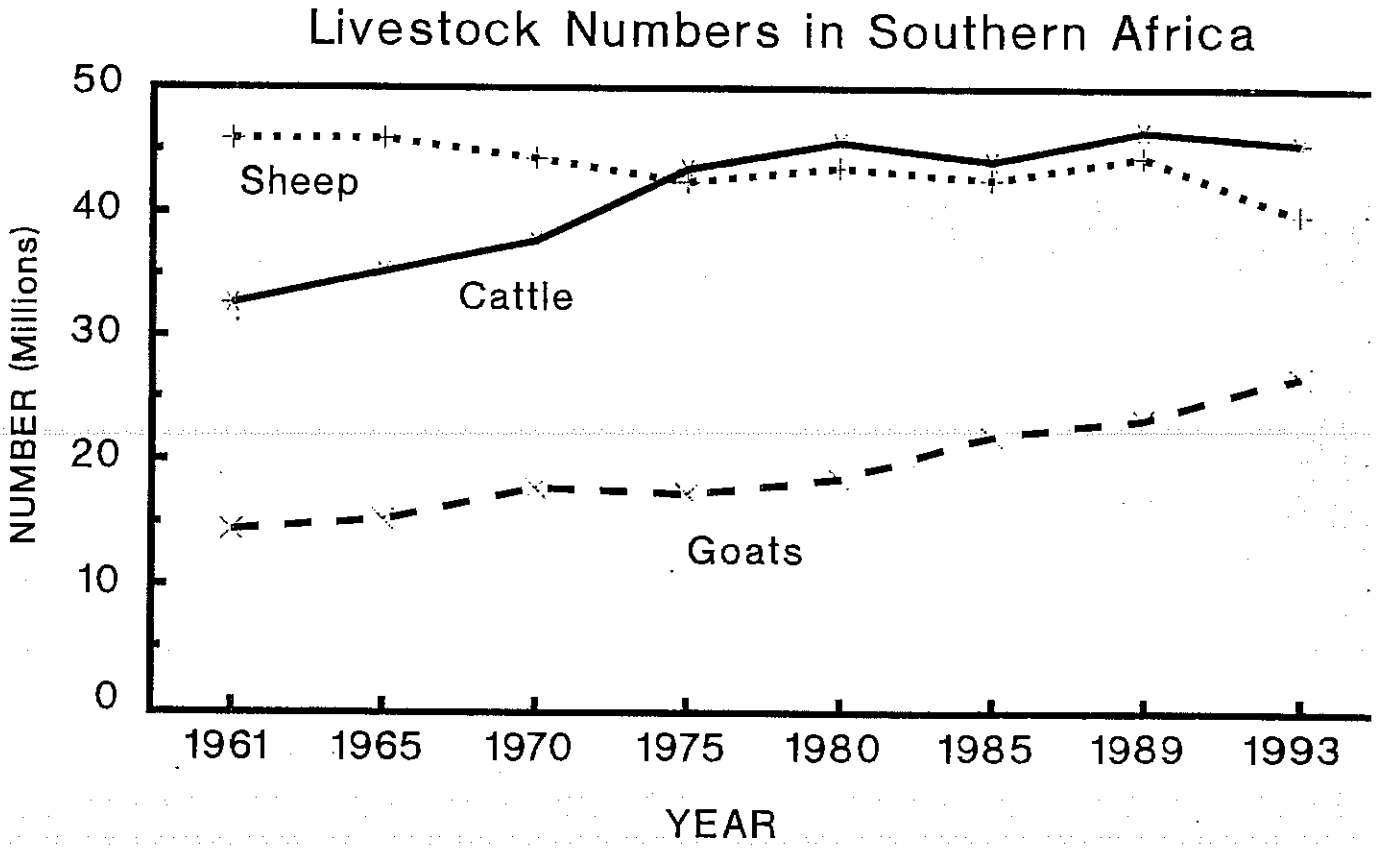


Fig. 3.4 Trends in livestock numbers for Southern Africa: 1961-1994. (Updated from Cumming, 1991)

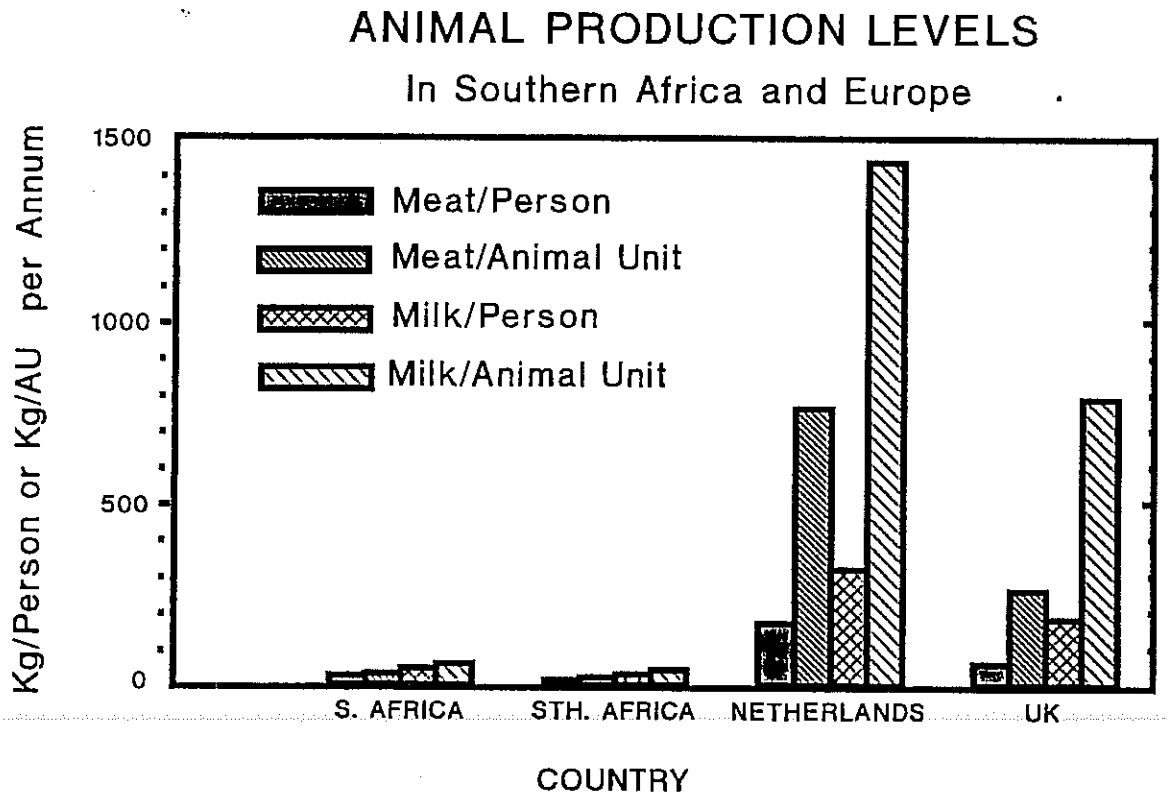


Fig. 3.5 Animal production levels in southern Africa and Europe (From Cumming and Bond, 1991)

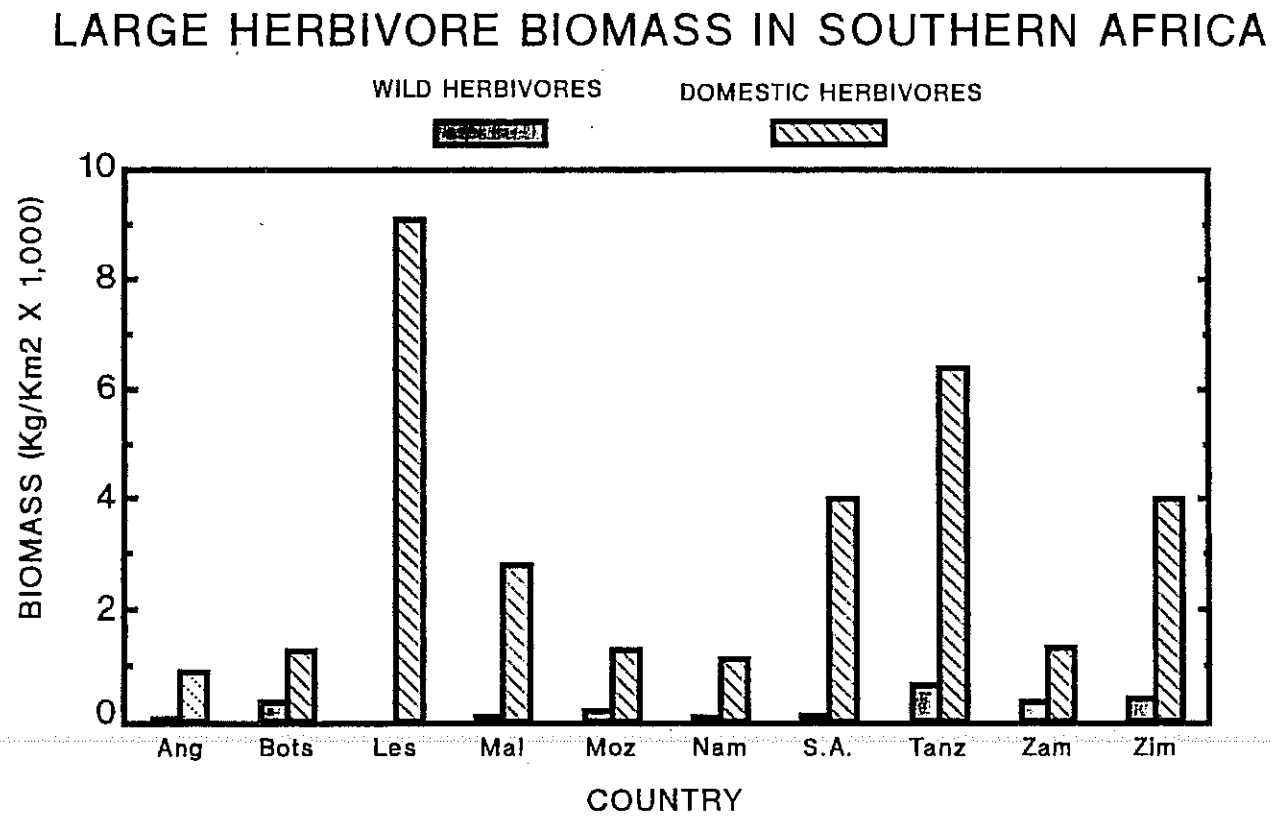


Fig. 3.6 Comparison of standing crop biomass of domestic lviestock and wild herbivores in Southern Africa (From Cumming and Bond, 1991)

3.1.3 Protected areas and other land under wildlife, forestry and fisheries

The area and number of national parks and game reserves in southern Africa has grown exponentially over the last century **(Fig. 3.7)** while at the same time the average size of protected areas declined with the addition of generally smaller areas. The largest mean size of protected area occurs in Tanzania (c. 4,800 km^2) while the smallest mean size occurs in South Africa (c. 370 km^2). The extent of communal, private lands and state protected areas in the region is summarised in **Table 3.1.4** and presented in **Map 3.1.7.**

The development of game ranching in southern Africa was greatly encouraged by the work of Fullbright scholars (Dasmann, Mossman and Riney) during the late 1950s and early 1960s and then later by changes in legislation in South Africa, Namibia and Zimbabwe during the 1970s. These developments led to the rapid expansion of game ranching and sport hunting on private properties (Cumming 1991a, 1991b) with the more recent developments of larger conservancies where several private ranchers have established common or joint management regimes for their wildlife and removed intervening fences (du Toit 1992). The extension of wildlife as a land use to communal areas of the region followed in the 1990s with the establishment of several CBNRM programs in the region.

Some indications of long term trends may be gained from the changes toward wildlife as a landuse in Zimbabwe and particularly in north western Zimbabwe where the area under wildlife has increased from 10,000 km^2 in 1930 when Hwange Game Reserve was proclaimed to more than 20,000 km^2 today involving several land categories, namely, National Parks, Safari Areas, Forestry Areas, Private Land and Communal Land (Cumming 1993). Substantial wildlife conservancies have developed in Zimbabwe where about 22% of the county's land is under wildlife with nearly half of this area being outside the National Parks and Wildlife Estate (Cumming, 1991b).

These changes in land-use, along with the network of gazetted conservation areas, indicate the potential for the broadening conservation areas across borders. Some of the potential and actual areas for TBCAs are presented in **Map 3.1.7a**. This map only shows the gazetted protected areas. Additional sites, including CBNRM areas need to be considered as well. The process of choosing areas for CBNRM will differ from area to area and will depend on stakeholder interests and goals. A checklist of the criteria that can be used for rating areas for their TBCA potential has been developed (Cummings 1998). Some of the criteria include measures of: existing land use designations, agricultural potential, habitat diversity, species richness, amount of threatened species or habitat, cultural importance, scenic values, tourism potential, and indigenous use importance. While useful in pulling information together, it is recognised that these measures are only a tool; and that the TBCA process is driven by a vast combination of ecological, cultural, economic and political issues.

Trends in large wild mammal populations.

The period 1600 to 1990 saw increasing and unsustainable harvesting of wildlife products from southern Africa. Ivory, hides and ostrich plumes were in particular demand. Most populations of ungulates and rhinos had reached very low levels by the turn of the century largely as a result of the widespread use of firearms and commercial exploitation linked to the colonisation of the region (Mackenzie 1988). During the 1890s rinderpest, the ungulate

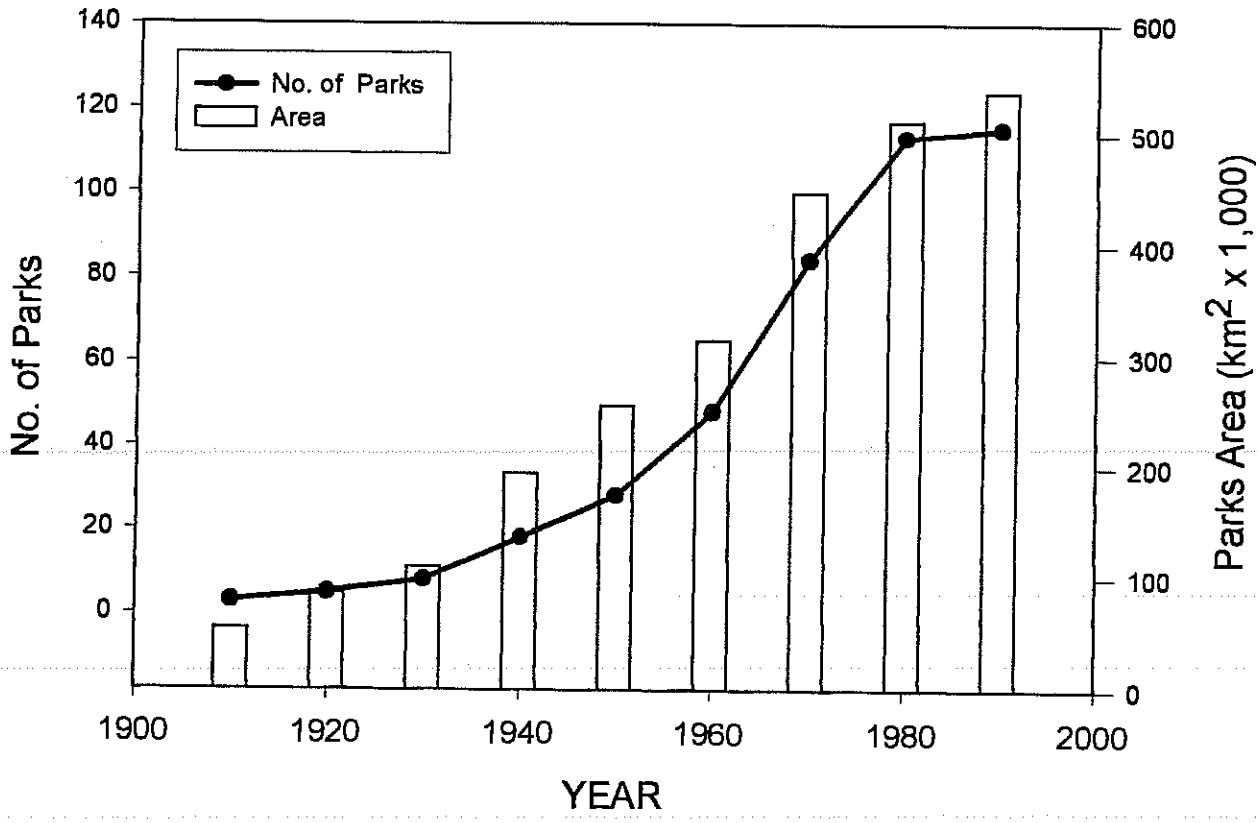
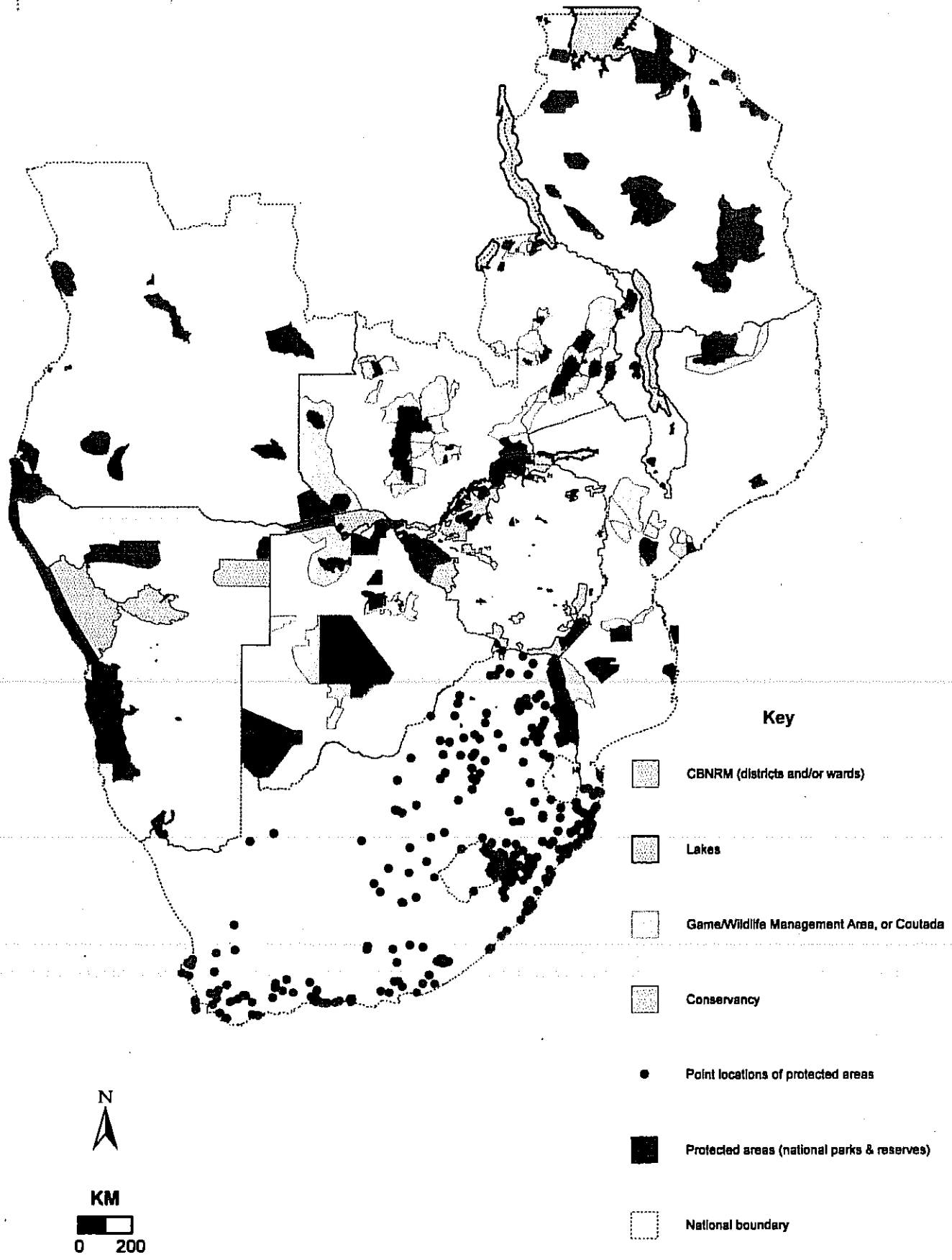


Fig. 3.7 Growth in number and area coverd by national parks and protected areas in southern Africa (less Lesotho, South Africa and Swaziland) between 1900 and 1990. (Redrawn and updated from Cumming, 1990)

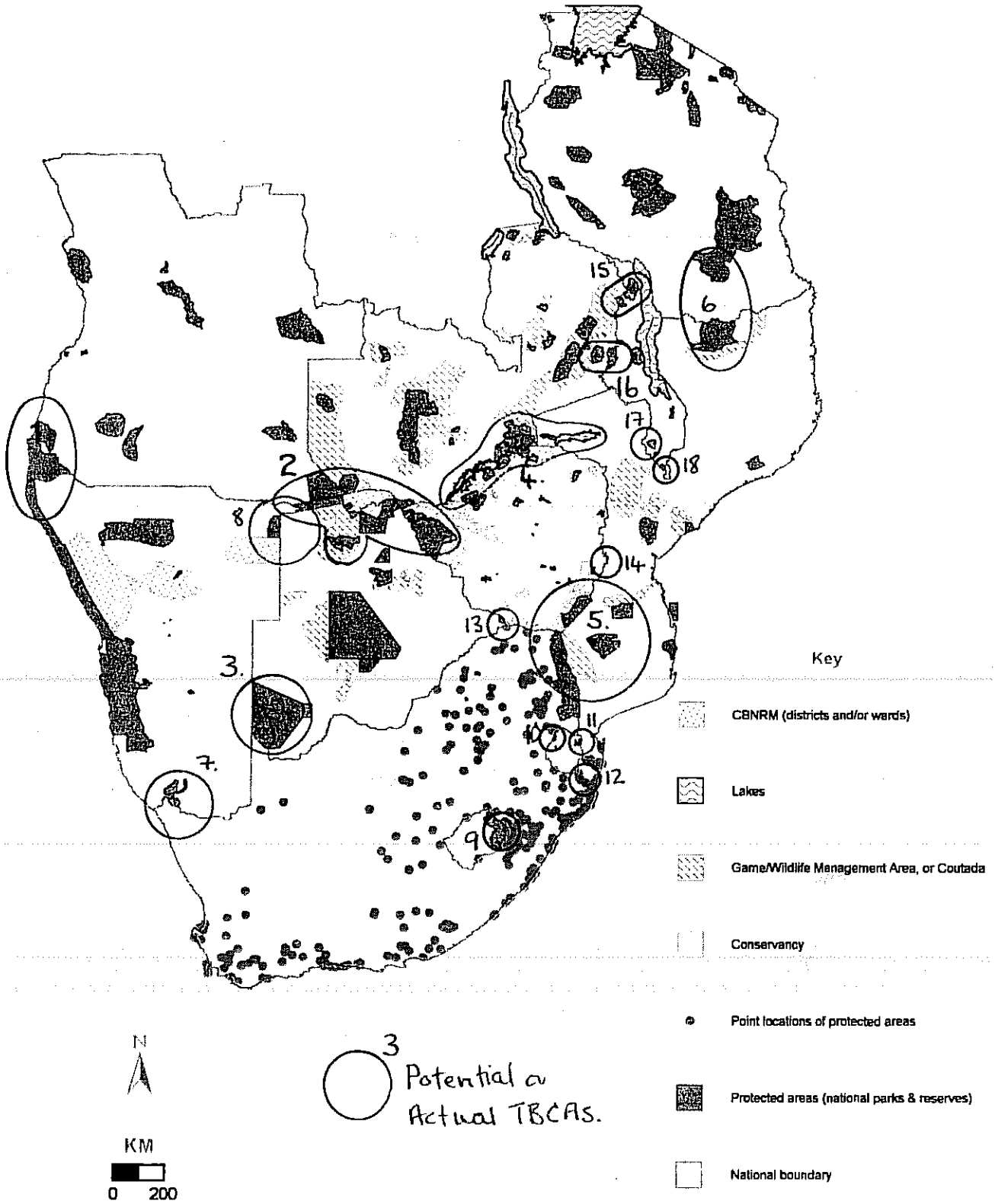
Table 3.1.4 Communal land, private land and protected areas available to wildlife in Southern African countries.

Wildlife Mgmt./Conservation.	ANGOLA	BOTSWANA	LESOTHO	MALAWI	MOZAMBIQUE	NAMIBIA	S. AFRICA	SWAZILAND	TANZANIA	ZAMBIA	ZIMBABWE	TOTALS
Communal Land:												
Game area (km2)	?	120,074.4	0.0	0.0	1.0	50,000.0	0.0	0.0	90,000.0	160,488.0	12,000.0	432563.4
% of Communal Land	?	28.2	0.0	0.0	0.0	15.2	0.0	0.0	12.1	24.0	6.3	21.15
Private land:												
Game area (km2)	?	1,000.0	0.0	0.0	0.0	22,725.0	160,000.0	45.5	0.0	0.0	28,000.0	211770.5
% Private land	0.0	2.8	0.0	0.0	0.0	6.1	17.9	0.7	0.0	0.0	20.3	16.86
No. farms	?	5.0	0.0	0.0	4.0	450.0	8,500.0	1.0	0.0	0.0	187.0	
% of Farms	?	2.5	0.0	0.0	0.0	8.2	7.1	?	0.0	0.0	4.7	
State land (Protected Areas):												
Total area (km2)	82,307.0	103,953.0	68.1	12,622.0	32,250.0	107,125.3	56,500.0	49.8	134,881.0	59,451.0	49,418.0	638625.2
% of country	6.6	17.3	0.2	10.7	4.1	13.0	4.6	0.3	15.2	7.9	12.7	11.62
Number of Protected Areas	13.0	9.0	1.0	21.0	9.0	13.0	153.0	5.0	15.0	19.0	30.0	
Mean size (km2)	6,331.3	11,550.3	68.1	601.0	3,583.3	8,240.4	369.3	10.0	8,992.1	3,129.0	1,647.3	
Total Area under Wildlife	?	225,027.4	68.1	12,622.0	32,251.0	179,850.3	216,500.0	95.3	224,881.0	219,939.0	89,418.0	1200652.1
% of country	?	37.5	0.2	13.4	4.1	21.8	17.7	0.5	25.4	29.2	22.9	25.56

Source: partially updated from Cumming (1991)



Map 3.1.7 Protected areas in Southern Africa (Soure: WWF-SARPO, compiled from various sources)



Map 3.1.7a Potential and Actual TBCAs in Southern Africa

equivalent of measles, reached southern Africa from the Arabian Peninsula and devastated livestock and wildlife populations in the region. The epidemic dealt the final blow to many already overexploited ungulate populations - particularly in South Africa while the extinction of elephant, as result of over-hunting, was anticipated south of the Zambezi (Bryden 1903). The collapse of wildlife populations over large areas and the establishment of colonial governments set the stage for the establishment of the first game reserves and hunting areas which later became National Parks.

Elephant populations have recovered from extremely low levels in 1900 to more than 250,000 in southern Africa today (Said *et al* 1995, Elemaps 1997). By the mid-1960s their numbers in protected areas had reached such high densities that woodlands were being destroyed and many agencies in the region implemented culling programs to control population growth (Laws 1970, Anderson and Walker 1974, Cumming 1980, Spinage 1990, Hall-Martin 1992, Martin et al 1989, Cumming et al 1997). High levels of poaching during the 1980s in Tanzania (Refs.) and Zambia (Jachmann and Billiouw 1997) resulted in marked reductions in the elephant populations in those countries which are now recovering. Elephant populations in southern Africa are presently thriving.

The fate of black rhino has been less fortunate. The continental population declined drastically this century especially during the 1970s and 1980s. During the period 1990-92 the population in Zimbabwe declined due to rampant poaching from c. 2000 to nearly 300 from which it is slowly recovering.

Indigenous Forests and Woodlands

The development of game reserves and related protected areas for large wild mammals was accompanied by an essentially similar movement in several countries in the region to preserve areas of indigenous woodland which were perceived as valuable timber resources or mountainous areas in the headwaters of catchments where watershed protection was important. Forest Reserves were also established in an attempt to reduce the uncontrolled "mining" of valuable timber resources (Judge 1993, Pierce and Gumbo, 1993). For the most part forest reserves tended to be smaller than game reserves and covered a smaller total area (**Table 3.1.5**). They have also been more prone to illegal resource exploitation and the area under protection within the region is probably diminishing rather than increasing.

Fuel wood and charcoal probably constitute the greatest direct use of woodland resources in the region and, as indicated in Table 3.1.3, wood fuel provides about 75% of per capita energy consumption. This high proportion is because the majority of people (> 60%) live in rural areas without access to electricity or other energy resources for cooking and heat. Current levels of harvesting (and growth in levels of woodland harvesting) are unlikely to be sustainable.

The all important issue of catchment protection, water yields and downstream impacts, often across international boundaries, is receiving some attention in regional programs aimed at integrated management of catchments. Examples include the Zambezi Action Plan (ZACPLAN) and the management of the Letaba and Olifants river catchments which run through Kruger National Park into Mozambique. From the point of view of TBCAs in the region montane areas with potentially important transboundary linkage would include the Drakensberg mountains in Lesotho, the Lebombo Mountains in Swaziland, the northern part of the Drakensberg which drains into Mozambique, the eastern highlands of Zimbabwe and Malawi both of which drain into Mozambique, and the highlands of Angola where rivers running into the large internal drainage basin of the Okavango/Kwando arise.

Table 3.1.5 Summary of the extent of protected indigenous forest reserves in southern Africa.

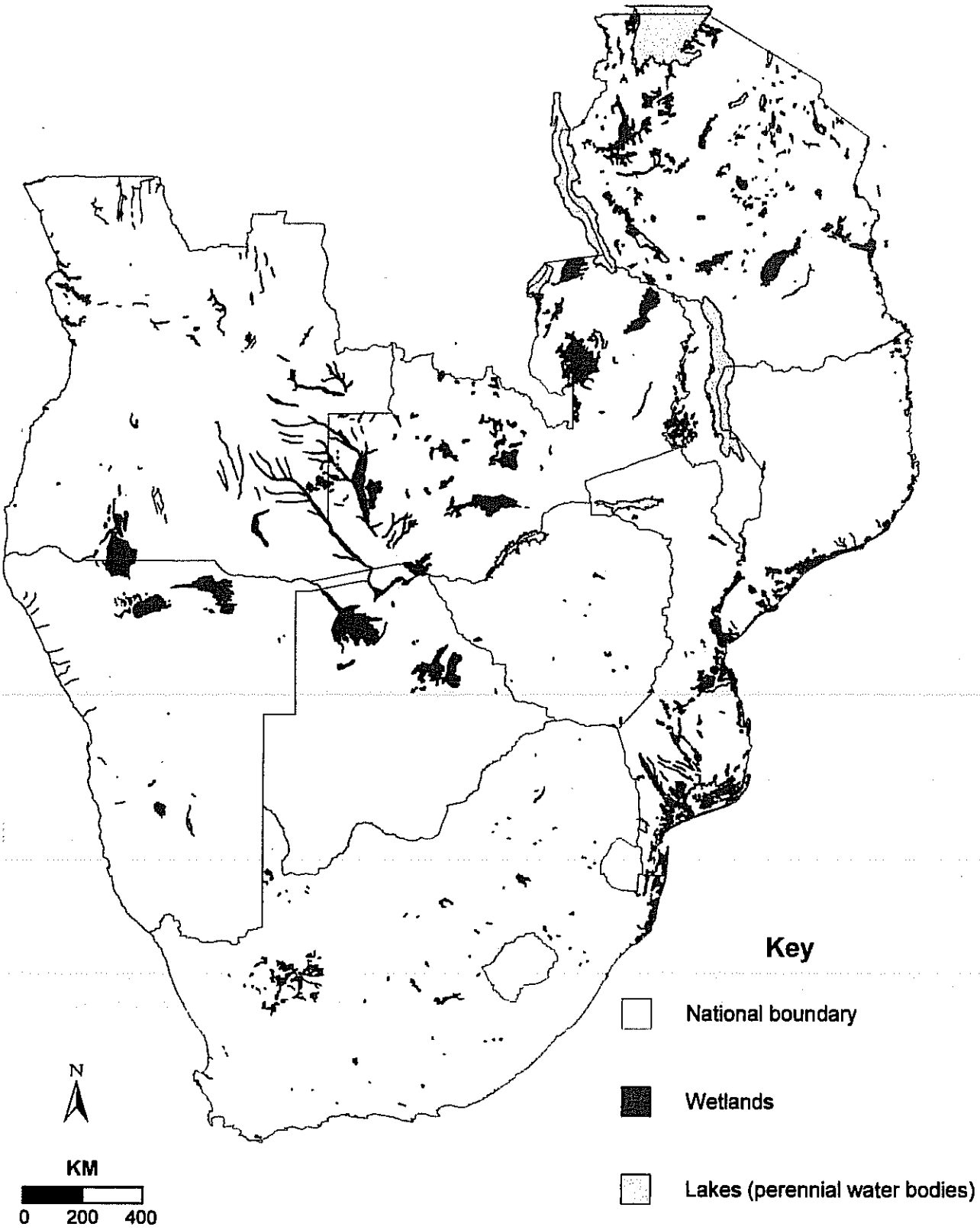
Country	No. Reserves	Total Area (km^2)	Mean Area	Range in Area	No. on Boundary	Source
Angola	?	?	?	?		No data
Botswana	6	4555	759	162-2400	6	World Bank, 1993
Lesotho	?					
Malawi	29	1317	45	0.5-262	8	World Bank, 1993
Mozambique	13	4471		16-1954	2 ?	Proagri Report , 1997
Namibia	?					
South Africa	41	18801	458	11-1900	1	IUCN/UNEP, 1987
Swaziland	?					
Tanzania	5	6257	1251	3-6213		IUCN/UNEP, 1987
Zambia	Note 1					World Bank, 1993
Zimbabwe	14	12800	914	7-1994	3	
Totals	103	48201			20	

Note 1/ The World Bank (1993) lists over 350 Forest Reserves in Zambia but the status and level of protection of these is not clear. They have been digitised by WWF-SARPO from a 1:1,500,000 scale and the larger areas are reflected in Fig. 3.8

Freshwater fisheries and wetlands

Wetlands cover some 13% of the area of southern Africa. There are several large natural lakes in the region, Victoria, Tanganyika, Rukwa, Nyasa/Malawi, Chilwa, Bangweulu and Mweru which support substantial fisheries as do the two major man-made lakes in the region, Kariba, and Cahora Bassa. All except Lakes Rukwa and Bangweulu in Zambia are split by, or are on international boundaries. There are several major wetlands in the region that are important fisheries and conservation areas (**Map 3.1.8**). Those that straddle international boundaries include: the Mweru-Wantipa marsh, the swamps upstream of Lake Mweru, part of the Bangweulu swamp, swamps on the lower Shire in Malawi, the Cuando/Linyanti/Chobe swamps in the Caprivi, and the wetland in the upper Zambezi which straddle the Angola/Zambia border. An area of saline pans in the Cunene drainage straddles the Angola/Namibia border and the Pongola river floodplain and associated wetlands fall within South Africa, Swaziland and Mozambique and flow into the Maputo River.

From a conservation perspective, Lake Nyasa has the highest species diversity of any lake in the world but Lake Tanganyika has a greater diversity of fish families and in terms of genetic diversity is the richer lake. Both of these lakes fall within the boundaries of three nations and therefore provide opportunities for the development of freshwater/lacustrine TBCAs. Conservation threats to these great lakes are the introduction of exotics, over fishing and the impacts of land use in surrounding catchments on the water chemistry of the lakes (Bootsma and Hecky 1993). The introduction of the Nile perch has eliminated about 65% of the endemic haplochromid fauna of Lake Victoria and the loss of about 200 taxa



Map 3.1.8 Major lakes and wetlands in Southern Africa (Source: WCMC-ADS)

from the lake (Goldschmidt *et al* 1993, McConnell 1993). It provides an eloquent if not tragic example of how a fish fauna which has taken 750,000 years to evolve can be decimated within 30 years by the introduction of exotic fishes (McConnell 1993).

3.1.4 Water supply and demand

Precipitation over southern Africa is almost entirely in the form of rain with snow falling over limited mountainous areas in South Africa during brief periods in winter. Of this 50% falls on the five major catchments of the region, namely, the Zambezi (1.338 km^3), Okavango (0.367 km^3), Orange (0.366 km^3), Rufiji (0.265 km^3) and the Limpopo (0.256 km^3). About 85% of the precipitation in the region falls in 48 out of 167 mega drainage basins.

The total amount of precipitation over the region, or in any one basin, is however, only part of the equation to determine water flows and water yields. Moisture is "lost" primarily through evapotranspiration and in arid areas this exceeds precipitation for most of the year. Water is absorbed into the soil and also percolates into ground water storage systems where it may later be discharged into rivers as ground water flow. The remaining water in the form of surface runoff accumulates in wetlands, streams and rivers. Until recently the prevailing view has been that all such water was available as a resource to be used by humans. Increasingly it is becoming apparent that if wetlands, rivers and estuaries are to remain functional entities a minimum flow of water is required is required to maintain their functional integrity (O'Keefe, 1986, Ferrar 1989). Apart from recent legislation and associated research in South Africa, the principle that a drainage basin has right to a share of the water flowing through it, does not seem to have been seriously factored into water yield and water demand equations.

The estimated demand only for South Africa, Swaziland and Botswana amounts to about 60% of the likely available runoff before the requirements to maintain functional rivers and wetlands have been fully considered (Chenje and Johnson 1996; WRI, 1992). This level of offtake bear out the generally held view that water will be a serious limiting factor to development in southern Africa in the near future (Falkenmark 1989, Falkenmark *et al* 1990).

The implications of very broad scale analysis of water yields and demands for TBCAs are not clear. However, as the demand for water increases with increasing human populations and industrialisation there is little doubt that rivers and wetlands will be placed under increasing stress. The effective management and protection of large, high yielding watershed areas such as the upper reaches of the Zambezi on the Angola/Zambia border, the highlands of central Angola which feed the Okavango and the Zambezi, and the highland areas of north-eastern Zambia, Malawi, and eastern Zimbabwe, Swaziland and Lesotho will be extremely important for the region as a whole.

3.1.5 Veterinary implications of TBCAs

One of the main goals of TBCA formation is the re-establishment of historical wildlife movement patterns. While changes in land-use patterns have resulted in a fragmented area available for wildlife, it is geographically possible to re-establish both cross border and local migration patterns. However, one of the main obstacles is conflicting methods and levels of disease control; as control by one country affects the large migratory fauna of its neighbours. Over the last century, control and prevention of disease transmission from wildlife to livestock, and from livestock to livestock has, in several countries, severely altered

wildlife movement patterns in southern Africa (the main diseases of livestock and a broad indication of their prevalence are summarised in **Table 3.1.6** and the links between some livestock diseases and wildlife are summarised in **Table 3.1.7**). Several nations have erected veterinary control fences to limit contact between disease free livestock (export quality) and non-certified livestock (for local markets) and wildlife. The formation of TBCAs requires that protocols be developed to address the myriad of veterinary issues that arise with animal movement between areas, especially across borders. Specifically agreements need to be reached on how to deal with wildlife/ livestock disease monitoring, prevention, control, and eradication.

In the simplest form, protocols will need to address issues of standardising disease monitoring programs between neighbouring countries. At its most complex, the success of TBCAs will depend on bi-national and regional (e.g. for rinderpest and foot and mouth) agreements to address issues where one nation's livestock or wildlife is disease free (either by eradication or barrier control), or stocked with disease free stock or has never been infected, whiles it's neighbours animals are infected (carriers included). To gain political support from the livestock-owner stakeholders, careful and early attention needs to focus on efforts to minimise wildlife-livestock and wildlife-wildlife (e.g. foot and mouth disease - free stock) disease transfer. Where adjacent conservation areas have different livestock/wildlife land use regulations (ie. National parks adjacent to CBNRM areas) it is necessary to address issues of grazing rights within the TBCA, issues of disease prevention and monitoring, and, should disease outbreaks occur - protocols for control, eradication and compensation.

Impacts of fences are important both cross border and within countries. Ecologically, fences (e.g. veterinary, road, stock, and those to prevent crop damage) are destructive. Fences clearly disrupt traditional animal movement, especially during periods of drought and stress when movement to critical water sources and secure grazing areas are key to animal survival. Failure to permit free movement of wildlife has and will continue to lead to drastic reduction in population numbers. In order to re-establish historical cross border movement of wildlife it may also require re-establishment of historical movement within individual countries. With increasing emphasis on wildlife based tourism and CBNRM, and TBNRM activities, it may be more beneficial to fence disease-free livestock into certain areas, rather than to fence wildlife out. By creating islands where disease-free livestock can be maintained, the possibility is opened to enable wildlife to move more freely and more in harmony with existing environmental conditions.

Table 3.1.6 Summary of major livestock diseases and their prevalence in Southern Africa

Disease	Angola	Botswana	Lesotho	Malawi	Mozambiq	Namibia	S. Africa	Swaziland	Tanzania	Zambia	Zimbabwe
Foot & Mouth	+	1980	-	+	+++	+	1991	1969	+++	++	++
Rinderpest	-	1896	1896	1898	1896	1904	1904	1898	1982	1896	1898
Pleuropneumonia	++	1939,	-	-	-	1924	1924	-	+	+	1904
Lumpy skin	+	1984	+	+	+	+	+	+	++	+++	+
Rift valley fever	?	-	-	+	+	-	-	?	++	+	1987
Bluetongue	+	+	+	+	+	+++	+++	+	+	+	+
Anthrax	+	+	+	+	+	+	+	+	+	+	+
Echinococcosis	+	+	+	+	++	-	-	+	+	+	+
Heartwater	++	++	-	++	++	+++	+++	++	++	+	+
Leptospirosis	+	-	+	+	+	+	+	?	+	+	+
Anaplasmosis	++	+	+++	++	++	+	++	++	++	++	+
Babesiosis	++	+	+	++	++	+	++	++	++	++	+
Brucellosis	++	+	+	++	++	+	+++	++	++	++	+
Theileriasis	++	-	-	++	+	-	+	+	++	+	+
Trypanosomiasis	++	+	-	++	++	+	1952	-	+++	+++	+
Malignant catarrh	-	+	-	-	?	+	++	-	++	-	+

Sources: Office International des Epizooties (1990) World Animal Health 1989, Vol. V, No. 2, Animal health status control methods (Part one: Reports) and (Part two: Tables).
(Table from Cumming & Bond, 1991)

Table 3.1.7 Some links between important livestock diseases and wildlife

Disease	Causal agent	Vector	Buffalo	impala	kudu	Eland	Wildeb.	Warthog	Zebra	White	Cattle	Sheep	Pigs
Foot and Mouth	Virus	none	C/S	S	S	S	S	S	-	-	C/S	S	S
Malignant catarrh	Virus	none	-	-	-	-	C	-	-	-	S	C/S	-
Rinderpest	Virus	none	S	S	S	S	S	S	-	-	C	S	S
African Swine fever	Virus	Sand tampan	-	-	-	-	-	C	-	-	-	-	S
Heartwater	Rickettsia	Bont tick	C	?	?	C	C	-	-	-	S	S	-
Trypanosomiasis	Protozoa	Tsetse fly	C	?	C	-	-	C	-	-	S	S	S
Theileriosis	Protozoa	Brown ear tick	C	-	-	-	-	-	-	-	S	-	-

NOTES: C = Carrier S = Susceptible - = unaffected

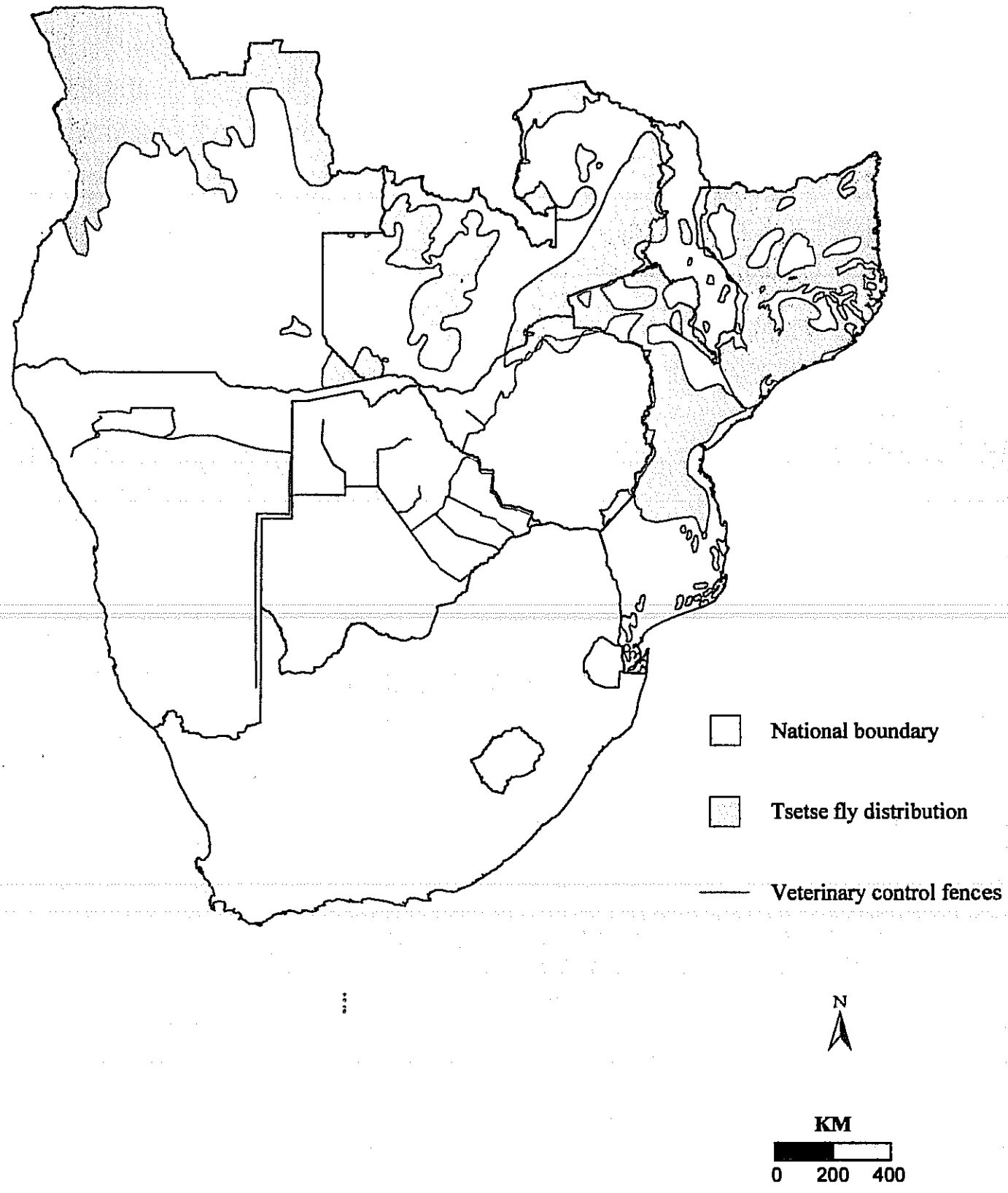
Table from Cumming & Bond (1991)

The economic viability of the livestock industry requires swift action in response to disease outbreaks. For example during the 1970s buffalo were eradicated from the south-east lowveld of Zimbabwe because they were considered the major source of FMD virus; more recently, a major outbreak of Contagious Bovine Pleuropneumonia (CBPP) occurred in cattle in north western Botswana during the early 1990s and thousands of head of livestock were slaughtered to contain the disease. However, prior to implementing control measures it is necessary to understand which vectors are responsible for infection as well as the ecological effects of such measures. For example, FMD outbreaks have historically been blamed on buffalo until the recent discovery, using DNA fingerprinting techniques, that some outbreaks in cattle in Zimbabwe originated from carrier cattle. There are also several clear examples of major detrimental effects of the foot and mouth disease (FMD) control fences on wildlife populations in Botswana (Williamson, Williamson and Ngwamotsoko 1988). In addition, the recent CBPP outbreak in Nambia resulted in an extensive erection of additional control fences in Botswana (Albertson 1998). These fences were erected without consultation or consideration the ecological requirement of the region's wildlife or for the economic viability of the region's tourism industry. Recently a small section of the fence was removed to permit wildlife movement, but the bulk of the fences still remain.

It is important to also consider the economic importance and potential growth of the tourism industry in dealing with livestock-wildlife issues. In addition it is necessary to measure and evaluate wildlife-wildlife impacts. Of equal importance to livestock-wildlife disease transfer is that between adjacent wildlife populations. Where populations have been separated either by fences or alternate land-uses, it is necessary to focus on the possible disease implications of rejoining wildlife populations. For example FMD is endemic in Kruger National Park, primarily in buffalo populations but also present in other species such as impala, kudu, warthog and bushbuck. Both livestock and wildlife populations on the Mozambique and Zimbabwe boarders are FMD free (naive population). The formation of TBCAs across RSA/Mozambique & Zimbabwe borders requires careful attention and agreement on how FMD and other diseases should be controlled. Concern has been expressed that if FMD – free wildlife is stocked in the Maputo Reserve and Corridor in Mozambique, and the border fence with South Africa is removed, the disease may spread north from wildlife in Kwazulu Natal.

Additional examples of disease outbreaks and identification of disease carriers will continue to occur. Infectious diseases are found in a host of organisms and are carried by a number of vectors. Even without TBCAs as a consideration, diseases do not respect political boundaries need be dealt with on a regional basis.

In conclusion, where fences are moved or completely eradicated, and control measures modified, agreements need to be developed between the livestock industry stakeholders and wildlife departments. These plans need to take a multi-pronged approach: (1) develop alternate fencing or eradication programs to protect disease free animals (both livestock and wildlife); (2) develop surveillance protocols to detect disease carriers and outbreaks proactively; (3) develop protocols for dealing with disease control prophylaxis and disease outbreak control procedures; and (4) change land use to avoid conflict.



Map 3.1.9 Distribution of major veterinary disease control fences and tsetse fly in Southern Africa. (WWF-SARPO)

3.2 Socio-cultural situation and the role of "communities"

3.2.1 Communities situated in a transboundary context

Many of Southern Africa's ethnic communities are situated in a transboundary context, living around key resource areas: riverine, wetland, arable land, grazing land, underground and surface water, aesthetic landscapes, wildlife, and forests. Many resource rich areas, such as riverine alluvial soils have had common property systems with managed access for years. These communities are well aware that political and administrative boundaries are often not contiguous with local cultural, ecological or trade systems. National boundaries were not premised on community land use perspectives. Very often the reverse occurred, and virtually all the "modern" national and administrative boundaries in the region have required communities to make significant adjustments to their forms of social organisation and to their means of meeting their livelihood needs. The reality for many communities is that they have been dislocated by national boundaries (see Map 3.2.1 and Table 3.2.1 below). The table below shows the high number of ethnic groups that span boundaries in the SADC region (source: Asiwaju A.I. 1995).

Table 3.2.1 Table of Transboundary Ethnic Groups

BOUNDARIES	PARTITIONED ETHNIC GROUPS
1. Botswana-Namibia	Ova Herero, Khoisan Basarwa, Bayei, Hambukush/ Hambasushu, Tonga, Subiya
2. Botswana-Zambia	Tonga, Subiya
3. Botswana-Zimbabwe	Va-Kalanga, Ba-Birwa
4. Botswana-South Africa	Ba-Tswana
5. Malawi-Mozambique	Yao, Sena, Nyanja, Chewa, Ngoni
6. Malawi-Tanzania	Ngonde
7. Malawi-Zambia	Chewa, Ngoni, Tombuka, Ngonde
8. Mozambique-South Africa	Swazi, Shangaan
9. Mozambique-Swaziland	Swazi
10. Mozambique-Tanzania	Makonde, Yao, Ngoni, Matengo
11. Mozambique-Zambia	Chewa, Ngoni, Nsenga
12. Mozambique-Zimbabwe	Barwe, Ndau, Manyika, Shangaan
13. Namibia-South Africa	Nama
14. Namibia-Zambia	Subiya
15. South Africa-Swaziland	Swazi
16. South Africa-Zimbabwe	Shangaan , Venda
17. Tanzania-Zambia	Mambwe, Inamwanga
18. Zambia-Zimbabwe	Balocolough, Tonga, Shona (KoreKore)

For a century cultural, socio-economic and political systems have been contained by nation states, first bolstered by colonialism and then by centralised nationalism. Across the region communities must ignore official borders in order to maintain livelihoods and cultural

Map 3.2.1 Ethnic groupings in Southern Africa (Redrawn from Puzo, 1978)

integrity. Communities living on national boundaries are very often frustrated in meeting everyday needs (e.g. trading goods and services; sharing spiritual occasions; finding a marriage partner).

For local communities, TBNRM is not a "new fad", but an daily reality. Hence, regional initiatives to support TBNRM could genuinely foster a local cultural renaissance. Socially, groups which may feel marginalized by their location in regard to boundaries would enjoy the enhanced status and identity that formal recognition of cross-border collaboration and communication might give. Directly related to environmental management, the indigenous knowledge systems (IKS) shared between ethnic groups could be harnessed effectively to support TBNRM and give TBCAs a special cultural context. A TBNRM programme could foster meetings between traditional leaders, healers, resource user groups, craft-makers, trackers, guides, range managers and others. In addition, communities which were a minority on one side could have their pride boosted by identification with stronger groups across the border.

3.2.2 Communities as part of the regional discourse

Local communities today are increasingly becoming more a part of the regional discourse, though this was not always the case. Despite millennia of coexistence with the African environment, the Indigenous Peoples were not active participants in the colonial discourse related to conservation (Crosby, 1987; Anderson & Grove, 1986). The dominant theme in conservation for decades related to species extinction as a consequence of human action, which generated attempts to reserve places for nature, and to separate humans from other species. The idea of 'fortress conservation' dominated the discourse in sub-Saharan Africa. African communities were cast in the role of 'poachers', while the state (colonialists) was placed in the more glamorous role of 'gamekeeper' (Hulme D. and M.W.M. Murphree, forthcoming; MacKenzie 1987).

Post-colonial Africa was launched into an ideologically divided world and most of the new governments[1] set about centralising authority and consolidating national unity.
The traditional social organisation of communities was perceived as a threat despite the fact that it provided the social cement, which enabled states to function as societies at all (Hyden, G. 1983). Initially the new nation states uniformly reached down to command the political, development and conservation agendas through their control of the policy arena, with Tanzania actually disbanding its traditional leaders in 1962. Across Africa traditional "voices" were ignored and the customary rules of access to land and natural resources were made subservient to state control. Rural Africans lost formal recognition of their IKS, especially in the face of democratic centralism. Governmental agencies administered communal land and resources for and with the people, leading to the formal dominance of civil communal society by the state, and communities became dependent on essentially weak governments. However, despite the state's attempted co-option of "community", traditional societies remained relatively intact because the state's "grasp was beyond its reach".

Since the 1980s, the dominant conservation discourse has been challenged, particularly in Southern Africa. The new states lacked the capacity to manage community through regulation and negative sanctions. To be effective as well as popular, governments had to

[1] The emergence of the 'independent' political regimes, alienated western-based 'conservationists' from management control of the new reserves, prompting a powerful European advocacy for Africa's wilderness values, were marginalised by a formal discourse maintained between 'northern' interests and new African governments.

provide positive incentives to ensure local people participated willingly in the conservation of biological resources as an integral aspect of their land use practices. By the 1990's the counter narrative, which supported Community Based Natural Resource Management (CBNRM) approaches was ascending, supported by such global watershed meetings as the Fourth World National Parks Conference (1992) and the Convention on Biological Diversity. These, *inter alia*, emphasised the fact that Indigenous Peoples and Local Communities were primary stakeholders and partners in a common endeavour. The need for positive incentives is recognised in the discourse by the prevalence of themes such as property rights, sustainable use, resource values, and the equitable distribution of conservation costs and benefits (Munasinghe M. and J. McNeely 1994).

CBNRM addresses the participation of local communities in the process of establishing local resource management and compatibility in relation to lands situated in neighbouring areas, whether protected areas, communal or private land. A substantial technical and institutional base has been developed over the last decade in the region related to CBNRM.[2] Table 3.2.3 identifies three of the archtypical CBNRM approaches, while the following section highlights some of the commonalties and contrasts of CBNRM in the region. The rapid growth of CBNRM initiatives has taken on characteristics of a programmatic, even a social movement, with a life of its own. Communities are now definitely part of the regional discourse.

Commonalties and contrasts of CBNRM in the SADC Region

- All communities have a rich heritage of indigenous knowledge systems.
- All countries manifest a dichotomy between customary and statutory means of legitimating behaviour especially in regard to land and natural resources.
- Women have security of tenure in few countries, in part because of customary inheritance rules.
- All countries except Angola and Mozambique have a heritage of British style administrative and local government institutions; Angola and Mozambique are fashioned after the Portuguese system
- Some countries (South Africa, Zimbabwe, Malawi, and Lesotho) face more resource competition (due to population density) than do others (Zambia, Botswana, and Namibia, Mozambique).
- South Africa, Zimbabwe and Namibia face land reform pressures consequent to their inequitable settler land apportionment systems.
- All countries have to confront agrarian reform in some way, partly driven by economic adjustment.
- Many countries, especially those with a heritage of centralised political and administrative systems, face governance reform involving decentralisation of authority and devolution of land rights.
- Rural communities in the region contend with formal state dominance of informal community systems, rendering them powerless in the policy arena: they are co-opted, compliant, dependent.
- Communities have spent a century as dependent entities under colonial and post-colonial states.

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[2] A comprehensive foundation bibliography was compiled through the USAID funded regional NRMP (see ref). SADC Wildlife TCU/NRMP. Dept. of National Parks & Wildlife, PO Box 30131, Lilongwe 3, Malawi. Or Africa Resources Trust, PO Box A860, Avondale, Harare, Zimbabwe. It is catalogued in Pro Cite.

CBNRM approaches

Three archetypal approaches covering a continuum of complementary strategies, suitable in specific situations, have been identified (Barrow and Murphree, forthcoming).

- **Park outreach** is a suitable response for a protected area authority;
- **community-based** is appropriate for landholders; and
- **collaborative management** is appropriate between land authorities.

Table 3.2.2 Location of Components of CBNRM in Context of TBNRM

COMPONENT	PROTECTED AREA OUTREACH	COLLABORATIVE MANAGEMENT	COMMUNITY-BASED CONSERVATION
	Conservation for / with the people	*Conservation with / by the people*	*Conservation by the people*
Whose agenda	TBCA development dominated by protected area parties. Community neighbours are subsidiary partners to achieve PA conservation objective	TBCAs dominated by protected area parties with communities slowly moving towards some joint management responsibilities.	Local community as legal land entities join protected area authorities as full and equal partners.
Who owns process	Protected Area with conditional benefit flow to communities	The state with concessions toward joint management & multiple use	Community has legal rights of access
Who plans	Joint planning only of outreach activities	Joint planning of multiple use access	Community often assisted by advisors / administrators
Who controls	Protected Area authority	Joint authority	Community authority (democratic/traditional)
Ownership of resources, areas	Protected Area controls relationship with dependent communities	Protected Area oversees unequal partnership	*De facto* community but depends on how well bounded/focused the tenure arrangements are
Dominant objective	Enhanced conservation & integrity of protected areas & TBCAs	Conservation of PA & TBCA through managed access to multiple use resources	Rural livelihoods: needs met but conservation needs integrated
Fate of conservation resource	Protected area core maintained for national heritage & benefit but wider TBCA manifests land use conflicts & fragmentation.	PA core maintained for national heritage. Benefits shared with local community groups & individuals. Use may not be sustainable & species may be affected.	Where resource insignificant to rural economics or culture, it may be lost. Resource maintained when culturally / economically valuable.

Communities and TBNRM or TBCAs

From a community perspective TBNRM describes the situation more accurately than the notion of TBCAs which emphasise conservation ahead of sustainable use. Communities must be convinced that TBCAs add and do not detract from the gains they have recently made. Tension between conservation and development objectives is real but TBCAs should not be an excuse for a retreat into the old fortress of "command and control" conservation. This century African communities have generally lost both wildlife property rights on their own land and also land rights, alienated to state run protected areas. New policies

separated wild animals from the ecological and economic systems of which they were an inherent part (Child G. & L. Chitsike, 1997).

A large part of the apparent success of CBNRM has been because it focused on communities themselves. It is very important that this positive development is not now constrained by any approach to TBCAs that might push communities to the margins of protected areas, and into weak partnerships with governmental and private sector agencies. Whether communities become real partners in, or merely "beneficiaries" of TBCAs, will be an important indicator of their long-term socio-political sustainability. Informal transboundary activities already exist between communities that could be nurtured rather than overwhelmed by regional political diplomacy, governmental bureaucracy, conservation advocacy, self-promoting publicity and tourist market forces.

3.2.3 Communities value resources and land differently

"For many rural communities, natural resources hold the greatest hope for sustainable economic growth and betterment of their lives"....

(CBNRM Policy, Botswana, 1998, p.2)

One of the critical elements of CBNRM is that resource economics, in very practical, down-to-earth ways, began to play a central role in finding incentive driven strategies that could link the conservation of biodiversity with the requirement for human agricultural and pastoral land use. To a large extent it is the value that the various forms of tourism[3] put on aesthetic and wildlife resources that has been a driving force within the CBNRM process. Before tourism emerged as a land use, most remote rural communities had little direct contact with the private sector. The concepts of resources as tourist commodities, and communities as resource-based companies, have presented new land use options, and the need for property rights institutions. From this start, CBNRM has expanded to assess natural resource values in a much broader fashion, including various veld products, etc. Communities have been motivated to reassess their land use by new resource values that can contribute to the development of their communities and household incomes.

3.2.4 Community participation in TBNRM partnerships

How far communities will be included in TBNRM partnerships and collaborative management arrangements will depend in part on whether communities are organised to assert themselves into the policy dialogue. Although significant advancements have been made, communities are still insufficiently organised at various levels. For example, the San communities have not been effectively included in joint ventures due to the weakness of community property institutions in the TBCA situation in the Kalahari area. Until communities are organised and formally recognised (e.g. through setting up their own Community Based Organisations (CBOs)), they cannot effectively engage governments, the private sector and other stakeholders. In fact, many governments tend to see communities as a sub-set of the state itself.

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3 Tourism includes the following aspects of recreational experiences: hunting, photo-tourism, eco-tourism, adventure, cultural, travel and sightseeing.

At a regional (or bi-lateral) level, rural communities, outside of local authority structures, are not organised or encouraged to represent themselves and participate in regional policy arenas. SADC could encourage civil society participation, through representative associations, in national and regional level planning fora. The relationship between communities and the other stakeholders involved in CBNRM is largely conditioned by how far governments have empowered communities to be the masters of their own resources.

Communities in southern Africa today exist under the rational-legal authority of nation-states.[4] Recognition of the juxtaposition of customary with statutory institutions is critical in understanding the utility of "community" as a concept in the context of CBNRM. Internally, rural communities manifest heterogeneity, differentiated and stratified on several interacting levels - lineage (position), gender (marriage, inheritance), age, wealth - each relating to resource access. However, the statutory dominance by centralised power structures (government, NGO, donor, private sector) means that communities are construed as uniform tenurial (land) and governmental entities. The "community" in CBNRM and in the TBCA context could be defined cynically as *'that unit of social organisation permitted to operate as such by the state'*. The challenge to fit the construct of a TBCA (form) to the dynamic reality (shape) on the ground demands confrontation (honest dialogue) between landholders and between them and national and protected area authorities. Farmers are the primary stakeholders in communal settings because their families have, over time, depended on the ecosystem they live in. Other parties' interests do not depend as directly and permanently on the local ecosystem (Dassman, 1988)[5].

Communities are heterogeneous and complex

The communal resource base presents an endowment to which many parties within a community may claim entitlement. Many informal institutions are not recognised or valued by policy makers and regulators although their policies may impact on peoples' livelihood strategies. Considering this complex communal structure (see Table 3.2.3) it is little wonder that any "community" would struggle to function as a distinctly unitary stakeholder in relation to "outsider" parties (state, private sector). The assumption of the homogenous community is partly contrived by external pressures and expectations for it to be so. However, for communities to function as institutions capable of effective decision-making they need recognition and to know what their rights and responsibilities are, especially related to land and land-based resources.

[4] Max Weber (1864-1920) identified 3 forms of legitimisation for authority in society i.e. traditional, rational-legal (bureaucratic) and charismatic. Southern Africa manifests dualism between the first two with ever-present populist possibilities for the last.

[5] Dassman contrasts "ecosystem" people who depend on the local resource base with "biosphere" people who depend on global market access and do not directly suffer if a single ecosystem deteriorates.

Table 3.2.3 Customary CBNRM Institutions

COMMUNITY INTEREST GROUP	TENURIAL Grouping	TERRITORIAL LOCATION	RIGHT OF ACCESS
The Household **Household Head (HH)**	Homestead family & dependants. Security of women depends on HH & his heirs.	Homestead area. Arable lands, common grazing & access to natural resources in village & beyond.	Access/inheritance through HH. Control over arable land, grazing & domestic livestock through male HHs
The Village **Village Head (VH)**	A set of households, which comprises the primary management unit (group) for land & resource access. Presided over by a VH.	Village area. Stock of arable & grazing lands & natural resources bounded within specific territory with reciprocal inter-villages access for strategic needs.	Mediation of intra-and inter-village access, inclusion/ exclusion to resources, especially common property resources. Critical "gatekeeper" institution.
Headmanship **Headmanship leader**	A set of villages which comprise the secondary management unit (group) of the lineage. Presided over by headman or sub-chief.	Headmanship Area. Provides most of the subsistence livelihood needs of the resident village-based households.	Mediates inter-village access to resources as well as inter-ward reciprocal arrangements. Provides unity & solidarity for villages. Key co-ordinator function.
The Chieftaincy **The Chief**	Set of headmanships form tertiary management unit of the lineage. Presided over by chief (sometimes paramount chief/king)	Chieftaincy Area. Provides for all the subsistence needs of headmanship, villages & households.	Mediates inter-headmanship access & overall inclusion/exclusion to Chieftaincy territory. Interface between customary / statutory management institutions.

In addition to the four community interest groups outlined above, there are two "sectors" that are important in considering CBNRM issues:

- Lineage (extended family, village, headmanship, Chieftaincy, clan) - Where families (same name or totem) live in different villages or areas, there may be a existing right of access to resources that transcend traditional village boundaries.

- Gender-based issues – While women do not generally have formal ownership of resources, they do, informally, manage access to specific resources at the household and village level.

Communities working with the private sector

From a community perspective the private sector seeks to acquire exclusive access over a particular resource or area, or to form a joint venture for a particular marketing purpose. The private sector needs to make formal and binding arrangements with authorised community agencies, but it routinely finds itself frustrated because communities cannot make effective decisions within a reasonable time frame. Often, because communities are rigidly administered, the private sector will attempt to by-pass communities to secure decisions at a higher level. This can lead to lack of transparency, which in turn can lead to corruption, and result in communities feeling cheated by their own authorities and alienated from "their"

resources.[6] CBO linkages at provincial, national and regional levels, while growing in number, are not common. One example of successful linkages occurs in Zimbabwe, where the CAMPFIRE (Communal Areas Management Program for Indigenous Resources) Association, as a CBO, can represent communities and liase with the private sector. The emergence of local CBOs is a necessity if communities are to protect and defend their own interests. In addition, there is a need for these CBOs to be consolidated vertically into national associations, but to date this happens infrequently in the region.

3.2.5 Devolution to the local level

Although governments in Southern Africa have been relatively progressive in promoting sustainable use at local level, devolution is not complete. CBNRM must be nested with the national legal framework related to land. At the macro level of the state only two basic frameworks have been provided, both versions of decentralisation. National governments have decentralised to either statutory or traditional authorities, or some combination of the two. In no case in SADC have communal land rights been devolved to households and individuals (men and women). There is a critical difference between the top-down approach related to decentralisation and the bottom-up approach related to devolution of rights. The relationship between these decentralised governance institutions and community-based conceptions of ownership and use ensures that CBNRM remains relatively fixated at the interface between the community (meso) and local and regulatory authority (macro) levels of communal property management.

Property and resource access rights

It is important that a "community" can register as a communal property organisation with the same rights and responsibilities as a private landholder. If the primary issue of who holds the land and resource rights is not clear, then other management aspects will be flawed. A rights-based approach to land and resource tenure would appear to be most in line with the wider policy environment related to civil society, market and governance. It is a necessary if not sufficient condition for sustainable CBNRM. Without clarity on this issue CBNRM will continue to struggle to accommodate a flawed design framework. The tenure/ governance issue lies at the heart of many of the lessons being learned in CBNRM in southern Africa at present.

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[6] In Zimbabwe, for example, the policy objective of poverty alleviation and that of economic empowerment can conflict when communities are expected to give concessions to groups who may not provide the most reliable or competitive marketing services.

Gender and devolution of rights and authority: still a long way to go

It must be admitted that in terms of gender, formal access by women to both democratic and traditional authority is a rarity in the region. It is the norm at present that land rights tend to be held by the head of household (male) who resides in his patrilineal home area. Certainly, individuals can in principle hold rights but there are no examples in CBNRM of formal wildlife rights or benefits being earmarked to individuals rather than households, villages or generally higher levels. Outside marriage, women on communal land remain dependent on their fathers or brothers for access to land. Women use natural resources but their management ability is restrained because their interests, especially in formal settings are, co-opted.

If a community is construed as the proprietor or producer of natural resources then in terms of market relations of supply and demand, resource user groups could be held accountable for their consumptive use. Whereas producer groups, for simplicity's sake, may be conceived as territorial land units, user groups need access to resource niches that may traverse proprietorial areas to reach the products they need. Pastoralist livestock owners may move from range to range depending on the seasons, crossing administrative boundaries as they track forage rich resource zones. In semi-arid areas grazing cannot be managed purely within a territory but requires horizontal collaborative management between area-based regimes. Women, as a resource user group collecting ilala palm leaves for craft production, may come from different villages with a common interest in a particular resource at the micro level (e.g. Shashe/Limpopo TBCA).

Devolution: a key to the 5 principles of CBNRM

Early in the CBNRM process 5 optimal principles were advocated that apply in TBCA or TBNRM contexts. They rest on devolution of tenure (access, proprietorship etc.) (Murphree, M.W., 1991).

- Giving resources a focused value so that community can appreciate it when conservation (management) benefits exceed costs.
- Differential burdens result in differential benefits (proprietorial equity within but not necessarily between communities).
- Magnitude of benefits should reflect quality of management (a positive relationship between active husbandry and harvest).
- Unit of proprietorship should be unit of production, management and benefit (dualism should be avoided).
- Unit of proprietorship should be as small as practical within ecological and socio-political constraints (efficiency in collective action).

The prototype for these principles was established in the mid-1980's with respect to private

farms and ranches in Zimbabwe and Namibia (Murphree, 1995).[7] Namibia and Zimbabwe's legislation conferred "ownership" or "custodianship" of wildlife resources on the owners of privatised land. However, the transplant of the private landholder model to communal lands is neither easy nor simple.

- The community **management units** analogous to private farms are not surveyed entities although they may well exist in the social and ecological geographies of local culture and traditional authority. They may also appear on the administrative maps of local government, but frequently these have little economic or ecological rationale. Practitioners and policy makers are unsure what criteria to use in determining these units, other than they should be small enough to provide face-to-face interaction for all members. The fact that CBNRM struggles to achieve this may be good as these units should be self-determined, but in the short run it makes initiation difficult.

- The analogous proprietorial unit in communal lands is far more **organisationally complex** than the private firm or ranch. Its membership is larger and internally differentiated, not only in terms of its membership but also in terms of its resource endowment. Members have specific usufruct rights over arable land but also have collective rights to the communal commons.

- The greatest problem is the **tenure status** of communities on communal lands who lack strong property rights, i.e. "the rights of possession, use and disposal of worth".

These basic principles provide an "ideal type" that CBNRM and TBNRM policies and programs need to approximate.

3.2.6 Authority as an issue: dualistic nature at local level

Communities need to be able to take decisions and have responsibility at the local level. All countries in southern Africa have to confront and reconcile the issue of dualistic authority over natural resources, typically between property systems legitimised by statutory law and customary convention. Land rights can be vested in the landholder (freehold or lease) but in communal systems, where CBNRM mostly takes place, authority is generally located with elected systems or patriarchal chieftaincies, or both. In some instances there appears to be an effort to foster a constitutional Chieftaincy where traditional leaders hold authority but their power is tempered by representative governance. Dualism can be seen in the following examples:

- "Authority" over access and use may be granted through a democratic system but actual "management" of land and resources is administered through customary communal form (e.g. Zimbabwe, Botswana, Tanzania).

- "Authority" is granted through traditional institutions but nascent democratic pressures push for executive accountability (e.g. Zambia, Namibia, Malawi).

Legitimate authority[8] is necessary if the institutional arrangements for decision-making

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[7] Quoted from Murphree in Key Note Address of *The Commons Without the tragedy: Strategies for CBNRM in Southern Africa.* Proceedings of the Regional NRMP Annual Conference. Kasane, Botswana, April 3-6 1995. Ed. Liz Rihoy. SADC WSTCU and USAID Regional NRMP

[8] Authority (definition) – "The power or right to control, judge, or prohibit the actions of others".

related to common property management are to be effective. The management of common pool resources is also complicated because the joint management of undivided biodiversity may mean that the ideal unit of social organisation (community management) may not coincide with the ideal unit needing to be managed (ecosystem). Ultimately, all human tenurial arrangements require collaborative endeavour to achieve the correct dimensions of scale. The joint management of a river means that tenurial systems collaborate horizontally (along the river) and vertically (watershed level).

Countries in southern Africa, and elsewhere, are preoccupied with these issues. Those with a settler past of dualistic tenure, private and communal - Namibia, South Africa, and Zimbabwe - are pressed by the need for equitable land distribution and tenure reform. The countries with a state socialist and centrist background - Tanzania, Mozambique, and Angola - where state ownership was pre-eminent, are challenged by land tenure reform to empower communities and the private sector. All countries have to confront how best to balance decentralisation from central to local government systems, the relationship between statutory and customary ones, and the need to devolve clear rights and responsibilities to land and a "bundle" of natural resources. Both Tanzania and Zimbabwe have undergone substantial public land tenure reviews. In both cases the fundamental recommendation for communal land was that rights should be vested in the people, the village assembly, and not in the council which represented them. Land rights were private and individual, first and foremost, and then had to be consolidated into group access rights and not *vice versa*. In both cases the governments opted to decentralise to councils but not devolve rights and powers to the people.

The conceptual confusion between governance and tenure is, debatably, the most critical design flaw in CBNRM policies and programs at present. Natural resource and wildlife use rights depend on land rights. The private sector, now fully supported by the globalisation process, demands legal rights of access to land and natural resources. The indigenous communal sector has generally only been granted these rights through their local authorities _ councils and chieftaincies - although trusts (Botswana) and conservancies (Namibia) are a positive refinement. The private model vests private rights in individuals or constituted groups whereas the communal model tends to empower institutions before people. Communities face the challenge of developing common property institutions within the framework of customary and statutory law. The latter, formal law, provides a rational-legal framework but often the customary institutions determine the legitimacy of entitlements to specific resource endowments (e.g. grazing, fuelwood, water, fields, medicines etc.).

Is it possible to upgrade what are effectively second class rights into full, registered ownership, with a diversity of options as to forms of ownership and internal rules? The region struggles with this possibility at present:

- **CAMPFIRE** (**Zimbabwe**) granted the district council (communal land authority) authority over wildlife. The district (some 3,000 km^2) with some 30,000 people cannot be compared as a management unit to the private landholder on 100 km^2.

- **ADMADE** (**Zambia**) allows government to oversee communal wildlife use rights closely and distribute benefits through traditional authorities (land authorities). There is presently a policy change that envisages a separation of powers between chiefs and communities with the former cast as symbolic owners and authorities while the people work through elected executive committees (constitutional patriarchy).

- **The TRUSTS of Botswana** are democratically based but the participatory unit (land unit) is usually customarily defined. Traditional authorities are encouraged to participate but not to preside.

- **The CONSERVANCIES of Namibia** allow a community to define itself (generally traditionally) and its territory and once its intent and institutional capacity is ascertained it is granted wildlife use rights (not full land rights). The relationship of conservancies to local authorities has yet to be clarified.

3.3 Policy and legal environment in Southern Africa in relation to TBNRM

This section addresses the major policy and legal arrangements that impact on the development and management of TBNR in the Southern African region. By policy, it is meant the specific courses of action that have been selected or decided upon to guide and determine present and future decisions. By legal, it is meant the rules of conduct or action laid down and enforced by a government body.

In general, there are very limited specific references to transboundary or cross border aspects in policy and legislation in the region. If something is written, it is more likely to appear in a policy document, rather than legislation. In part, this is due to the fact that policies are often reviewed and amended before laws are. As in most instances, there is a general tendency in the region to be more "advanced" or "progressive" in policies, as they are not as binding as legislation. Policy and legislation have developed in an incremental evolutionary style, building on previous changes. As this evolution continues it is expected that transboundary aspects will be dealt with in a more specific nature during the next few years.

The most essential ingredient necessary for TBNRM is the authority, the right and powers, to enter into transboundary agreements, and implement actions. For the most part, limited concrete statements in policy or legislation allow, or transfer authority to an institution to address cross border relations.

3.3.1 The starting point: political boundaries can limit TBNRM

> *"In view of the fact that so many African borders are artificial creations that cut across ethnic groupings, it is not surprising that many of the continent's inhabitants have often expressed dissatisfaction with them."*
>
> (Nkiwane, 1997, p.19)

Before the issue of authority to act trans-border can be addressed, it is important to recognise the reality, existence and limitation of political boundaries. It is, in part, due to the existence of these boundaries, that authority is required to establish collaboration across them. The majority of the boundaries were established before most of the existing national governments came into existence, many over a hundred years ago during the so-called "Scramble for Africa". Although the quote by Nkiwane holds true for many Africans, and he makes a case that borders still need to be "rationalised" (Nkiwane, 1997, p.14), the colonial

boundaries have been widely agreed upon[9]. The Organisation of African Unity (OAU) has had a policy of recognising and maintaining these colonial borders, with all member states pledging themselves "to respect the borders existing on their achievement of national independence" (Resolution 16 (1) of the First Ordinary Session of the Assembly of Heads of State and Governments, 1964), despite the fact that these boundaries were considered by African nationalists as "'artificial' and anti-African" (Nkiwane, 1997,p.11). In addition, most SADC countries[10] specifically recognise these boundaries in their policy and legislation. For example, Botswana's Wildlife Conservation and National Parks Act, 1992, defines the boundaries of its parks and conservation areas in relation to the country's international boundaries as stipulated by the 1961 OAU resolution on international boundaries. South Africa has the same definition of areas according to international boundaries in its National Park Area Act no. 57 (1976).

Since colonial governments generally acted independently of one another, an argument can be made that the boundaries formulated clearly did not consider NRM[11]. Ecological rationales were not used when randomly determining these lines on the map. The boundaries followed geometric or linear projections on maps and/or followed geographic features such as rivers (e.g. Zambezi, Ruvuma), lakes (e.g. Tanganyika, Malawi/Niassa) or mountain ranges (e.g. Drakensberg). Boundaries tended to be in marginal areas where natural resources were not disputed. Because borders were, and largely remain, peripheral to the key mineral and agricultural resources, they are often the least developed in terms of infrastructure and other aspects. They were the last areas to be developed, and received the least attention in terms of management.

In many ways, the comparative remoteness and lack of development focus has continued to maintain these boundary areas as optimal lands for what they are most ideally suited for – wildlands with potential for sustainable natural resource use. However, these lines on the map have superimposed false margins, and have ignored social/cultural, ecological and economic realities and potentials. Hence, now the regional management and sustainable use of shared resources represents a major challenge and opportunity for the Southern African Development Community (SADC) region.

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[9] The Caprivi Strip, on the borders of Botswana, Namibia, Zambia and Zimbabwe, is one area in which there remains no clear agreement on the exact boundary (Nkiwane, 1997, p.75).

[10] Swaziland is one exception in the region, where pre-independence Swazi territory has been included in the territorial sovereignty of South Africa and Mozambique, despite claims that the land belongs to the Swazi Nation (Swazi Nation Land Act, 1961). The land reform act in South Africa could recognize the authority of the Swazi King and certain NR areas, e.g. the forest resources shared with South Africa.

[11] Although they did not specifically address transboundary issues, there were conservation agreements reached by these colonial powers, see Conservation for the Preservation of Wild Animals, Birds and Fish in Africa (1900) and the Convention Relative to the Preservation of Fauna and Flora in their Natural State (1933 – London Convention). The 1933 Convention later served as the basis for the African Convention on the Conservation of Nature and Natural Resoruces (1968).

3.3.2 SADC - going beyond boundaries

> *"The 1992 SADC Treaty[12] commitment to integration and a new regional community also reflects the cultural and environmental realities that many peoples as well as wildlife, natural resource and ecological zones have always transcended national boundaries in the region."*
>
> (SADC Policy and Strategy for Environment and Sustainable Development, ELMS, 1994, p. 3, emphasis added)

SADC is the one institution in the region that appears to be taking on the challenge of going transboundary; it sees opportunities for the region and views borders as agents of economic change and development. SADC sees self-sustaining development for the region on the basis of collective self-reliance, and on the interdependence of Member States. Although this section will show SADC's clear support for transboundary issues, the main question still remains whether the authority to take action exists. Yet, as stated earlier, these changes are of an evolutionary nature and the fact that SADC has outlined and recognised the importance of transboundary relationships is a strong step in the direction of supporting the development and management of TBNRM.

The SADC treaty, in general, supports the ideas of TBNRM, as TBNRM is within SADC objectives and strategies. Specifically, the treaty encourages the development of economic, social and cultural ties across the region (Article 5, par. 2 (b)). It promotes liberalised border policies that eliminate obstacles to the free movement among member states of capital and labour, goods and services, and of the region's peoples (Article 5, par. 2 (d)). In order to achieve this free movement, exchange control, immigration and customs regulations will eventually have to be changed. Efforts to make these changes are on-going in SADC. The treaty further states that policies and plans should be harmonised and the appropriate institutions for implementation should be created.

The treaty is designed not only to affect SADC as an institution, but has an understood duty of each individual member nation to adopt in its own adequate measures to promote the achievement of the SADC's objectives (Article 6 par. 1). In lieu of this duty, "member states shall take all necessary steps to accord (the) treaty the force of national law" (Article 6, par.. 5). In addition, members are to refrain from taking any measures that might hinder the implementation of the provisions of the treaty. Hence, if any member state acts in a way likely to prevent the treaty's aims, then it is in direct violation of the treaty (e.g. according to the treaty, any action by one state to tighten exchange controls or immigration and visa procedures would be acting illegally). So, provisions of the treaty are applied not simply at the international level between the signatory states, but within the internal legal systems of those states themselves.

In regards to NRM, SADC has policies, protocols and statements that promote cross border initiatives; most of these are based on the framework of the Regional Policy and Strategy for Food, Agriculture and Natural Resources (FANR) (1992). The FANR lists among its objectives:

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[12] The Southern African Development Community (SADC) treaty, signed on August 17, 1992 in Windhoek, Namibia (with South Africa joining in 1994), by the Heads of State or Govemments, purpose is to encourage economic cooperaton and integration „through the establishment of an economic commmunity of states".

- "To ensure the efficient and sustainable utilisation, effective management and conservation of natural resources."
- "To incorporate environmental considerations in all policies and programs and to integrate the sustainable utilisation of natural resources with development needs." and
- "To ensure the recognition of the value of natural resources so that they can contribute optimally to the welfare and development of all people of the region"(SADC, 1992, p.1).

In the wildlife sector, the link with transboundary is spelled out clearly. The mission statement of the SADC Wildlife Sector Technical Co-ordination Unit (WSTCU) "recognises that ecosystems and ecosystem processes extend across national boundaries of SADC member states" and that the sector will "strive to improve the quality of life of SADC people by means of a regional approach to sustainable utilisation of wildlife resources" (SADC, WSTCU, 1997). In the SADC Wildlife Policy, goals and objectives of the WSTCU support a TBNRM approach in the following specific objectives:

- support programs aimed at the conservation of regional ecosystems and landscapes, especially those that stretch across national boundaries (8.2.1);
- facilitate actions aimed at preventing man-induced extinction of any indigenous wild plant and animal species, especially where populations are distributed across national boundaries (8.2.2);
- co-ordinate efforts to combat illegal trade in wildlife and wildlife products, especially across national boundaries (8.2.3);
- develop common strategies to conserve populations of endangered, endemic and cross border migratory species (8.2.4);
- support appropriate management of water catchment & aquatic ecosystems, especially where they extend across national boundaries (8.2.5); and
- support initiatives aimed at the development of transfrontier conservation areas (8.2.6) (SADC, 1997).

These policy objectives, and their support of TBNRM, are given more weight by their integration into the Draft SADC Wildlife Sector Protocol. The objectives of the Protocol talk about taking "common approaches to the sustainable use and conservation of wildlife resources", "harmonising legal instruments" (including veterinary regulations), exchanging information and "promoting the conservation of shared wildlife resources through the establishment of transfrontier conservation areas" (SADC, 1999, p.5) The later is further supported in Article 7, in which:

- "Member states shall, as appropriate, establish programs and enter into agreements with other Member States to promote the cooperative management of shared wildlife resources and wildlife habitats across international borders".
- "Member states shall, in recognition of the location of key wildlife resources near international boundaries, promote the development of transfrontier conservation and management programs" and
- "Two or more Member States may establish specific agreements within the framework of this Protocol to promote cooperative management, the conservation of species and populations and the marketing of their products"(SADC, 1999, p.10-11).

The Forestry Sector Policy and Development Strategy for SADC (SADC, 1997) stresses commonality in problems and the need for regional cooperation; however, it fails to place significant emphasis on cross border or transboundary elements. Under resource management strategies it does specifically state: the development of regional fire management program and protocols for transboundary cooperation in forest protection and

the prevention of illegal trade of forest produce and information sharing networks, with particular emphasis on the collation and dissemination of information on forest types and influences that cross national boundaries. In addition, under strategies for environmental management it addresses the need for monitoring deforestation, negative transboundary impacts and success of mitigation measures (SADC, 1997, p.15-16).

The SADC Policy and Strategy for Environment and Sustainable Development takes the strategic approach that the first priority of any SADC program should be to address issues that are truly "regional" in nature. Hence, one of the major strategies is managing shared natural resources on an equitable and sustainable basis. The more detailed issues and projects proposed in the policy and strategy fall into several categories, the first three of these are:

- Major problems that are common to two or more countries (land degradation, deforestation, etc.);
- Resources and ecosystems shared by two or more countries (e.g. the Zambezi River, migratory wildlife, international fisheries, the Kalahari-Namib);
- Problems with transboundary impacts in two or more countries (e.g. siltation of rivers, fires, etc.) (SADC, 1994, p.37).

Water is one of the most critical transboundary resources in the SADC region. The draft Regional Protocol on Shared Watercourse Systems was developed in 1995. Initially overseen by SADC-ELMS, the Water Resources Sector was separated into its own unit at the 1996 SADC Summit and the Water Sector Co-ordination Unit (WSCU) was established. The Protocol has since been ratified. Some of the key elements of the Protocol are:

- Develop close co-operation for judicious and co-ordinated utilisation of the resources of shared watercourse systems in the SADC region;
- Co-ordinate environmentally sound development of shared watercourse systems in the SADC region in order to support socio-economic development; and
- Consolidate other agreement in the SADC region regarding common utilization of certain watercourse (SADC 1995).

In September 1998, the WSCU presented the Regional Strategic Action Plan for Integrated Water Resources Development and Management in the SADC Countries (1999-2004). The Action Plan has seven (7) strategic objects; the first 2 are:

- SO1: Improve the legal and regulatory framework at the national and regional level
- SO2: Improve national and transboundary river basin management, planning and co-ordination. (SADC WSCU 1998)

The Action Plan lists a number of priority projects. The projects were selected on a number of factors, the first of which are: (1) " projects which have emerged in response to a common need within the integrated water resource development and management strategy for the region, and (2) projects that are regional or have regional implications (SADC WSCU 1998).

The SADC Protocol on the Movement of People if it is ratified, should impact transboundary aspects by easing the movement of local people across borders.

The Draft SADC Tourism Protocol, in keeping with the SADC treaty, indicates that the member states have an obligation to strive towards the removal of practices that could be obstacles to regional tourism development. Specifically the protocol identifies the need to facilitate intra-regional travel through the easing or removal of travel and visa restrictions,

the harmonisation of immigration procedures, the creation of a uni-visa for international tourists travelling in the region, the need for improvements in air transport networks, the creation of a favourable investment climate, and joint marketing and joint ventures (Article 5, SADC, 1998). It further states that "policies for the development and marketing of tourism products and services of the region need to be harmonised" and that cross-border investment and transfer of know-how is to be encouraged, specifically from "the more developed parts of the region to those not so advanced in tourism development" (SADC, 1998, p.4).

3.3.3 Does SADC provide the authority for transboundary initiatives?

The various SADC protocols and policies described in the previous section provide clear support for member nations to pursue transboundary initiatives. Even though comparable policies or legislation do not exist in most of the countries, an organisation or group in a nation could initiate TBNRM by making reference to the provisions of the treaties. This is support by the treaty, which states that the agreements made by SADC equally apply within the internal legal systems of those states. Unfortunately, this is not easy or pragmatic. Although the SADC policies and treaties would seem to indicate otherwise, the reality is that SADC lacks the authority to enforce agreements and is, therefore, reduced to playing more of an advisory or advocacy role (similar to what happens with international conventions, see below).

While the policies are supportive of establishing and managing transboundary initiatives, they do not generally address how to proceed. SADC can only encourage its member states to take certain actions; it cannot provide authority for actors in nation states to make agreements with neighbouring states, prior to having national policy, legislation or agreements in place.

In accordance with Article 33 of the SADC Treaty, the only power that SADC has to force compliance by member states is it to apply sanctions Under this provision, any Member State which is party to a specific protocol can have sanctions imposed on it if it persistently fails, without good reason, to fulfil obligations, or if it implements policies that undermine the Treaty's objectives and principles. The process of actually applying these sanctions is tedious. Sanctions would only come into effect after a report is submitted to the Council that then makes recommendations to the Summit, which then decides, on a case-by-case basis, the appropriate sanction to be imposed. Sanctions rarely happen.

3.3.4 Relevant International Conventions and TBNRM

Similar to the SADC protocols, certain member states are signatories to various international conventions that inherently, or specifically, state broad support for NRM initiatives of a transboundary or regional nature. Although not all SADC member states are signatories to these agreements, the Draft Wildlife Protocol encourages the cooperation and implementation in SADC of CITES, RAMSAR (Convention on the management of Wetlands and Waterfowl) and the Bonn Convention on Migratory Species (SADC, 1998). These conventions currently have been ratified by eight, five and one SADC members, respectively. All SADC states discussed in this study have ratified CITES, the U.N. Convention on Biological Diversity, and the U.N. Convention to Combat Desertification - see below, the year each country ratified is listed in ( ).

- Ramsar Convention on Wetlands of International Importance (1971): Botswana ('97), Malawi ('97), Namibia ('95), South Africa ('75) and Zambia ('91);
- World Culture and Natural Heritage (1972): Malawi ('82), Mozambique ('83), Tanzania ('77), Zambia ('84) and Zimbabwe ('82);
- CITES Convention on the International Trade in Endangered Species (1973): Botswana ('78), Malawi ('82), Mozambique ('81), Namibia ('90), South Africa ('75), Tanzania ('80), Zambia ('81) and Zimbabwe ('81);
- Convention on the Conservation of Migratory Species of Wild Animals (1979): South Africa ('91);
- UN Convention on Biological Diversity (1992): Angola ('98), Botswana ('95), Lesotho ('95), Malawi ('94), Mozambique ('95), Namibia ('97), South Africa ('95), Swaziland ('94), Tanzania ('96), Zambia ('93) and Zimbabwe ('94);
- UN Framework Convention on Climate Change (1992): Namibia ('94) and Zambia ('93);
- UN Convention to Combat Desertification (1994): Angola ('97), Botswana ('96), Lesotho ('95), Malawi ('96), Mozambique ('97), Namibia ('97), South Africa ('97), Swaziland ('96), Tanzania ('97), Zambia ('96) and Zimbabwe ('97).

Of the global conventions listed above, it is important to note that only the U.N Convention to Combat Desertification calls for the development of regional and Sub-Regional Action Plans, in addition to National Action Plans. The SADC Environment and Land Management Sector (ELMS) has developed the *Sub-Regional Action Programme to Combat Desertification in Southern Africa* (SADC-ELMS 1997). The Action Programme states:

> 'Whereas over-cultivation, overgrazing and deforestation have previously been identified as the three major causes of desertification in the sub-region, they are in fact the result of much deeper underlying forces of a socio-economic nature, such as a general over-dependence on natural resources" (SADC-ELMS 1997 pg.vii)

The ideas of this statement strongly support the need for TBNRM activities within the region. Although the other UN conventions do not mandate the development of regional action plans, they do provide an important forum for regional cooperation to address regional and global issues.

For example, the Ramsar Convention, which encourages joint conservation measures for transboundary wetlands, has been acted upon in the region. Efforts of cooperation have taken place between Namibia and South Africa Oranjemund (where the mouth of the Orange River meets the Atlantic), and between Zimbabwe and South Africa on the pans between the Madimbo corridor and Kruger National Park (de Villiers, 1998, p.101).

However, one problem with these agreements is that few countries actually have the national legislation to make the content of the international agreements binding in their own countries. South Africa is one exception as it links the adherence to international regulations to the Constitution (Environment Conservation Act no. 73 of 1989)[13] and states in its White Paper on Environmental Management Policy (1998, p.51) that "it must pass domestic legislation to give effect to its international obligations". The Environmental Management Policy of South Africa even appears to lay the groundwork for transferring of authority when it states that "all relevant interested and affected parties must have adequate opportunity for participation in negotiating, entering and implementing international

[13] Although the Constitution was re-written in 1996 this principle has remained.

agreements" (1998, p.51).

In addition to the above, there are regional agreements that address natural resource issues. One of the first[14] to identify the need for a broader perspective towards NRM was the African Convention on the Conservation of Nature (1968). It highlighted the importance of the conservation, use, and development of wildlife resources within a framework of land-use planning and economic and social development, both inside and outside protected areas (Rudge, 1997, p.2). This was clearly in support of a more bioregional form of management.

There may be reluctance to sign certain international agreements due to concern that neighbouring member states may not be able to effectively enforce the legislation. This made be especially true of trade and law enforcement types of agreements. For example, the Lusaka Agreement, Agreement on Cooperative Enforcement Operations is directed at Illegal Trade in Wild Fauna and Flora (1994), and has only been signed by five SADC countries: Lesotho, South Africa, Swaziland, Tanzania and Zambia.

Other regional agreements are extremely successful. For example, the Zambezi River Basin Action Plan (ZACPLAN) was established in 1985 to " foster regional co-operation among the Zambezi basin states for environmentally sound management of the common water resources" (SADC WSCU 1998). Its member states are: Botswana , Mozambique, Namibia, Tanzania, Zambia, and Zimbabwe. The ZACPRO 2 project (one of the plan's activities) became the model for the development of the 1995 SADC Protocol on Shared Watercourse Systems (see Section 3.3.2).

3.3.5 National frameworks and TBNRM

In most SADC countries, there is very little said directly about TBNRM in legislation or policy documents; a few exceptions are described below.

Statements in support of TBNRM

South Africa's recent White Paper on Environmental Management Policy for South Africa (1998) indicates that South Africa's regional isolation negatively impacted its commitment to regional growth, and that its environmental problems cannot be solved in geographic isolation. In order to extend international co-operation the Presidential Council, in 1991, tasked itself to promote transboundary conservation. In addition, the 1996 Green Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity included transfrontier conservation in its policy and strategy to promote co-operation at the international level. South Africa also recognises tourism as a link towards transfrontier co-operation. In particular, it was noted that a Southern African regional forum should be created on the basis of joint management strategies, regional tourism linkages, and bioregional approaches to environmental management.

Malawi's Draft National Wildlife Policy (1998) suggests that the field of co-operation must include partner institutions in neighbouring countries. Specific emphasis is placed on

[14] Others include the 1933 Convention on the Protection of African Flora and Fauna and the 1951 Plant Protection Agreement, both of these which were entered into force before most of the SADC countries achieved independence.

aspects such as joint poaching patrols, research programs, and the control of illegal trade in wildlife products.

Mozambique's Environmental Law (1997), in Article 13, provides the legal basis for the creation of protected areas of national, regional or even international nature; this can be interpreted as in direct support of TBNRM. In addition, Mozambique's National Tourism Policy (1995), although it does not state anything specifically about transboundary issues, stipulates that high quality regional tourism and the promotion of regional tourism must be part and parcel of infrastructural and legislative reforms. The Ponta de Ouro Zone of Mozambique's tourism strategy will target high-income tourists from neighbouring South Africa and therefore lends itself to TBNRM initiatives.

The most notable legislative action recently occurred between Botswana and South Africa when an agreement was reached on the recognition of the Kgalagadi Transfrontier Park (South African Government Gazette, 28 August 1998 – notice 1810 of 1998). Although the draft bi-lateral agreement was published for public comment, various policy guidelines were stipulated that could act as legislative guidelines in a more formal agreement. This includes aspects such as: joint recognition, undivided eco-system, co-ordination of management, shared revenue freedom of movement and adherence to international law (see 3.3.8 below for more discussion on this development).

Barriers to Legal and Policy Frameworks: statements hindering TBNRM

At times the national frameworks tend to hinder TBNRM by being overly protectionist or by promoting policies that are a dis-incentives to TBNRM. One example of this is Botswana's Agricultural Legislation which justifies the creation of foot and mouth disease control corridors and cattle fences on the international boundaries, which hinder TBNRM activities (see Veterinary section for more detailed discussion on this topic). However, while the Botswana National Policy on Natural Resources, Conservation and Development (1990) emphasises the importance of the livestock and indicates the use of an "interventionist approach under which a combination of laws, price incentives and fiscal reliefs in effect determine the dominant land uses" (1990, p.4), it also states that two other approaches are expected to dominate more in the future, both of which are more supportive of TBNRM and sustainable development. These are: resource allocation based on 'reasonable rationing' and zoning and multi-purpose (integrated) use and management of resources.

Another area in which TBNRM is hindered is in statements that are contradictory to devolution (see 3.3.6). Although devolution is often talked about and identified as critical, not as much is actually written to support this principle. Tenure and resource access rights, a key part of the devolution of authority, are not yet adequately addressed. In many SADC countries, e.g. Angola, Malawi and Swaziland, legislative powers and decisions about land rest with the state, usually the King or President. In these situations, other stakeholders only have user rights and tenure issues still need to be addressed. In Botswana (Chapter 8 of the Constitution), the state is said to hold fundamental interest over natural resources, however, it may assign or delegate management, utilisation or proprietary rights to specific resources to individuals and groups, including CBO's.

Make policy and legislation nationally, take action (drive the process) locally

An interesting aspect of TBNRM, thus far in the SADC region, is that initiatives have normally started at the local level and then must turn towards the national level for support and authority. As stated in 3.2, at the community level this interaction has been on-going since before the boundaries were established. Thinking beyond boundaries is part of local level reality and policy, it is the means for determining existing and future decisions. These local-level actions can take place between various configurations of local level stakeholders, including the following:

Communities: Communities along the Zambezi River, Tchuma Tchato (Mozambique), ADMADE (Zambia) and CAMPFIRE (Zimbabwe), have initiatives at the borders of these three countries. Collaboration was first started by the communities, building on traditional relationships and then slowly bringing in some provincial support; generally these have not gone to a national level (except in Mozambique where a special legislative diploma was passed to enable communities to benefit from wildlife schemes). In two of the three areas, national parks neighbour the other side of the communities; these could develop into a Community-Protected Area situation as well.

Communities and Protected Area Managers: Along the Drakensberg-Maloti Mountains is an example where protected area officials (South Africa) are making efforts to co-ordinate fire management and other practices with communities on the other side of the boundary (Lesotho). Another example exists between Malawi and Zambia in the Nyika-Vwaza area where Chief Chikulayamemba has constituents in both countries and his people in Zambia are often unofficially involved in resource harvesting in the protected areas in Malawi.

Protected Area Managers: The protected area managers in the Gemsbok National Park in Botswana and the Kalahari Gemsbok National Park of South Africa have been collaborating with each other since 1948, on joint game census programs and other issues, without an official policy or legislation backing this action. The realities of the local situation necessitated cooperation and therefore it somehow found a way to happen. Obviously, this cooperation was limited and constrained due to its unofficial nature. In the end, for this particular situation, the local initiatives have led towards the establishment of a bi-national agreement which will soon expand the potentials for collaboration and improved management (Notice 1810, Bilateral Agreement, 1998). Other informal exchanges of information or assistance include cooperation on anti-poaching, which happens throughout the region (e.g. Kruger NP - South African National Parks - and Conservation Authorities in Mozambique). Unfortunately, in most instances, the provision of this national support is an exceptionally long process and serves to dampen and slow down initiatives.

3.3.6 Devolving authority internally can assist the TBNRM process

As stated earlier, the granting of authority and the right to determine use of resources is a critical first step. In Namibia[15], South Africa, and Zimbabwe legislation was introduced in the late 1960's and early 1970's, which initiated the allocation of this authority. The legislation allowed private land owners rights to manage and commercially benefit from wildlife on their land. This converted wildlife into an economic asset, and greatly stimulated game ranching and the emergence of "conservancies" in these countries. These changes were the precursor to a similar allocation of rights to communal areas, which followed in all three of these countries. In Zimbabwe, CAMPFIRE was supported by legislation drafted in 1982 (Rudge, 1997,p.15). In Namibia, communities are able to form communal land conservancies and, in turn, acquire rights over the wildlife on their land as specified in the policy "Wildlife Management, Utilisation and Tourism in Communal Areas: Benefits to the Communities" (1995).

The allocation of this authority to communities initiated the CBNRM movement in the region. CBNRM has continued to develop and clarify its role in policy. Botswana's Community Based Natural Resource Management Policy (Government Paper No. 19, 1998)[16] is one of the most explicit and well laid out documents in this respect.

The CBNRM Policy states as an objective "to devolve management rights over natural resources directly to qualifying local communities" (p.2) in effect translating areas that allow open access to natural resource into common access areas (p.6). The policy goes further to state that "clear conditions of resource access must be part of CBNRM initiated programs to guarantee equitable and broad distribution of created benefits" (p.4). This is accomplished, in part by allowing, in certain instances, CBOs exclusive access to natural resources (p.7). The Government enters into resource leases when communities create Representative and Accountable Legal Entities (RALE), a more legalised form of CBO (like the creation of Associations or Trusts in Malawi and District Councils gaining 'Appropriate Authority' status in Zimbabwe), in which the communities adopt self-regulating procedures (constitution and/or by-laws).

The Botswana CBNRM policy goes one step further than most to make a statement about providing revenues to support this devolution. It states that: "Land Authorities and District Councils receive substantial revenue generated from lease fees and royalties in both commercial and community areas. The Government encourages that this revenue is directed towards promoting the objectives of CBNRM and community development...". The policy is also progressive in its encouragement of the support and involvement of private enterprises, including tourism operators, to advance partnerships and skills transfers. It is also progressive in its identification of the undervaluing of resources; and government recognition of "the potential of involving rural communities in natural resource based and cultural tourism as a key means to combat poverty" (p. 5).

The Wildlife Policy of Tanzania (1998) falls in line with other progressive nations in the region and marks a clear break with previous policies in Tanzania by making provision for community management of wildlife on local community lands. This is done in part by

[15] Namibia's Government Ordinance of 1968

[16] Listed as an extension of the Wildlife Conservation and National Parks Act of 1992; the Tourism Acto of 1992; the Tourism Policy of 1990; the Botswana national Conservation Strategy of 1990; the Wildlife conservation Policy of 1986; the Agricultural Resources conservation Act of 1974; and the National Development Plans 7 & 8.

allowing communities to establish Wildlife Management Areas (WMAs) - a type of common property regime. The Wildlife Conservation Act (1974) provides the legal backing to this policy, in that it empowers the Minister for wildlife to declare "Authorised Associations" which, in effect, describe the WMAs. Tanzania has also provided support to customary access rights in the Land Act Bill (1998). The bill states that customary titles are, in every respect, of equal status and effect as the granted titles (LEAT, 1998, p.3). Although these are elements that would help TBNRM, the Tanzanian Framework does not refer specifically to transboundary issues, even though there is recognition of buffer zones, dispersal areas and wildlife corridors.

As in Tanzania, Namibia makes no specific reference to transboundary conservation or co-operation. However, the Decentralisation Policy (1996) did raise the possibility of legislative reform on a decentralised basis. The areas of decentralisation mentioned focus on the deconcentration of central government decision making, deregulation of organisations, and the devolution of control to sub-national level. This policy sets an important tone in Namibia that is conducive to TBNRM. The 1996 Namibia Forestry Strategic Plan and the 1997 Forest Act use the devolution of authority as a component in their documents, although again no specific mention is given to TBNRM.

Mozambique's new Land Law (1998), in Article 31, also includes provisions for the participation of local communities in the protection of natural resources.

3.3.7 National Policies and Legislation

The harmonisation of policies and legislation would definitely make TBNRM a much easier process. The SADC Treaty states that this harmonisation should exist along side the creation of appropriate institutions for implementation. However, it is not expected, nor realistic, that all national policy and legislation in the region would become the same. What is sought is sufficient national legislation to make provisions for bilateral and regional alliances and agreements in support of, or enabling, TBNRM. As is discussed with the Botswana-South Africa case below, it is more realistic to address each TBNRMA on a case by case basis, rather than to unilaterally change all legislation at the national level.

Furthermore, in most cases, a TBNRMA will need to have its legal identity within the framework of the individual national legal systems. No international precedent exists to date in which an independent international agency has been established with its own legal status and with exclusive jurisdiction over a TBNRMA. In this extreme case, states would be handing over all management and authority to the international body.

3.3.8 Transferring authority to conservation organisations or others

In the case of the Kgalagadi Agreement, the Governments of Botswana and South Africa have shown how conservation organisations can be allowed to act as agents of governments in the execution of international obligations, in effect transferring authority to the organisations. This case is possibly the least complicated version of TBNRM, because it is between two state protected areas. However, the same principle could be applied to community associations, local government authorities or others. The following section briefly examines this interesting case in more detail.

The Gemsbok National Park (NP) in Botswana (28,000 km2) and the Kalahari Gemsbok NP in South Africa (9,591 km2) share a 300 km border. Since 1948, on the basis of an informal "gentlemen's agreement", cooperation has taken place and the two areas have been functioning as one ecological unit without fencing and with free movement of wildlife. In 1964, the Botswana warden enhanced the cooperation by making some of his South African counterparts (the warden and some senior staff) honorary rangers in Botswana. This action allowed easier access into the Botswana park and facilitated joint activities (anti-poaching, game census). A Transfrontier Management Committee was formed in 1992 to determine ways to enhance the cooperation. The efforts of this committee have led to the recent establishment of the Kgalagadi TFCA.

The critical element of establishing the Kgalagadi TFCA is the signing of a bilateral agreement between Botswana and South Africa. This agreement takes the roughly 50 years of cooperation to a new level, in that it provides the collaborating government agencies the authority to make joint management decisions on behalf of their respective governments. This is an especially significant step for the South African National Parks (SANP) which as a statutory body has no legal powers to engage in activities outside South Africa, nor does it have the right to enter into agreements with a neighbouring nation (de Villiers, 1998, p.106). This devolution of authority was able to take occur due to a provision in the South African Constitution (1996), which states, in section 238, "an executive organ of state in any sphere of government may – exercise any power or perform any function for any other executive organ of state on an agency or delegation basis" (de Villiers, 1998, p.6). Hence, what South Africa was able to do was to appoint SANP as an "agent" of the government, to fulfil its responsibilities, in terms of this international agreement. The Department of Wildlife and National Parks is the agent for Botswana. The agreement is a bi-lateral treaty concluded by the Department of Foreign Affairs.

The agreement is based in three documents:

(1) an international agreement between the two states;
(2) a record of understanding (ROU) between the respective conservation agencies (which again recognises each other's sovereignty in terms of national legislation and sets up a management agency); and
(3) a management plan for the day to day management of the area.

The international agreement recognises the "sovereign equality and territorial integrity" and separate legal systems of the two states. The "Agreement shall in no way be construed as derogating from any provision of the respective laws of the Parties or any other agreement entered into between the Parties" (Notice 1810, 1998, 7). Therefore, a separate legal authority is not being applied, rather, the framework for managing the area will be based on the national legislation of the two countries. To facilitate this, the two governments agree to remove legal and practical obstacles and impediments, and to harmonise national legislation as far as possible (Notice 1810, 1998, 2.2.3). An area of management concern is that in some very visible areas, e.g. in regards to visitor relations (gate times, etc.), the two parks currently differ. It was agreed that the joint regulations would be drafted to resolve these issues.

The Kgalagadi area plans to eliminate travel documentation requirements. This would create a visa free zone between Botswana, South Africa and Namibia, as long as the visitor remained within the transboundary area and did not exit into a different country. A link with the conservancies on the Namibian side will be facilitated by way of a entrance gate that will be opened at the Mata Mata rest camp on the South African side of the border (de Villiers,

1998, p.109).

The agreement also sets up the Kgalagadi Transfrontier Park Foundation responsible for the direction of activities without taking legally binding decisions. An important aspect of the foundation is that it is registered as a section 21 company under South African law[17] and is therefore entitled to receive donations and to distribute funds within the TFCA. In this way, the foundation can gain a certain degree of financial autonomy critical for sustainability. The agreement also states that "an equitable apportionment of revenues generated by the Parks, i.e. the gate fees...shall be shared equally" (though other revenues from tourist facilities will be maintained individually) (Notice 1810, 1998, 2.2.4).

Although the management plan address the matter of stimulating cooperation and partnerships with neighbouring communities, no specific integration of other stakeholders (e.g. communities) has occurred at this stage. On the Namibian side, there is some discussion with private land holders to integrate them into the Kgalagadi area in some fashion. However, a more urgent concern of integration is with the San community on the South African side. The San of the Kalahari are making a land claim for 25,000 hectares of land bordering the Kalahari Gemsbok, and for land use rights for over half of the park itself.

South Africa appears to be taking a historical perspective on land claims and the San's claim most likely will be recognised. The Minister of Land Affairs is quoted as saying: *"From the beginning I recognised the legitimacy of the San's claim. It is clear they lost their land rights and access to resources during the process leading to the creation of the park. The challenge now is to come up with a creative package to achieve the community's long-term viability".*[18] Whether the San claim is, or is not, recognised, the need to integrate communities surrounding the two protected areas is one of the next steps in this TBNRM process.

3.4 Organisational situation in respect to TBNRM

This section addresses the administrative structures that direct and manage efforts to develop and manage transboundary natural resources. These structures are also responsible for ensuring that policy and legislation (see 3.3) are implemented. Discourse in the region highlighted the preference of using the term organisational as opposed to institutional, to more appropriately define or categorise the structures. The organisations involved in the region are mainly of four types: regional government (SADC), national governments, non-governmental organisations (NGOs & CBOs) and private sector. The latter, NGOs and private sector, are discussed in 3.5, so this section will concentrate more on the first two, regional and national government organisations.

3.4.1 SADC´s technical organisational structure

The Southern Africa Development Community (SADC), which evolved from the Southern

[17] South African Companies Act (no. 61 of 1963), the company enjoys equal legal personality in Botswana and South Africa.

[18] Minister of Land Affairs, Derek Hannekom, quoted in an article "Sands of Time Run Out for the San" (The Star. Thursday September 24, 1998).

Africa Development Co-ordination Conference (SADCC), was formed to promote co-ordination throughout the region. The SADC Declaration Treaty and Protocol mandates the creation of specific Commission and Technical Co-ordination Units (TCUs) to assist co-ordination on a sectoral basis. Each sector is co-ordinated by a particular country. For the most part, the sector designations correspond to the natural strengths of host countries. The following list provides the sectoral breakdown and the corresponding country responsibilities:

- Food, Agriculture and Natural Resources (FANR)
    - Agriculture and Research (SACCAR) – Botswana
    - Environment and Land Management (ELMS) - Lesotho
    - Food Security - Zimbabwe
    - Forestry (FSTCU) and Biodiversity Conservation (BC) - Malawi
    - Inland Fisheries (IFSTCU) – Malawi
    - Livestock - Botswana
    - Marine Fisheries and Resource - Namibia
    - Water (WSCU) - Lesotho
    - Wildlife (WSTCU) - Malawi
- Energy - Angola
- Tourism - Mauritius
- Culture and Information - Mozambique
- Transport and Communication - Mozambique
- Human Resources - Swaziland
- Industry and Trade - Tanzania
- Mining - Zambia
- Finance and Investment – South Africa

The concept of dividing up the responsibility for the various sectors within SADC makes good political sense. However, from a functional standpoint it can be problematic as the various sectors are dispersed around the region and co-ordination of the various sectors is difficult (logistics of co-ordination, alone, are a concern). Lack of co-ordination is a well recognised problem in SADC, as identified in a FSTCU study that stated "linkages between forestry and the other SADC Sectors are weak at the regional level.." (Simon, Reid and Collins, 1997, p.8). This presents an interesting paradox considering that the main purpose of SADC is to promote regional co-ordination.

Biodiversity Conservation (BC) presents another co-ordination problem as it is an issue in more than one technical unit and thus requires a cross-sectoral approach. The difficulties of co-ordination (as well as politics) were shown during the Southern African Region Biodiversity Conference (Maputo, 1996) when there was some confusion and conflict in identifying a focal point for co-ordination of BC. This function was eventually handed over to FSTCU at a joint meeting in Salima, Malawi in January 1997.

Similarly, the SADC Natural Resource Management (NRM) Programme, which addresses CBNRM and other NRM issues, is ideally a cross-sectoral program. The fact that the NRM program was allocated to the WSTCU has restricted its impact and, at times, has caused it to duplicate or overlap activities carried out by the FSTCU. This example also points out the difficulties of trying to fund and implement multi-sectoral, or collaborative programs within SADC. The same reasons (political and administrative) that this does not work well at the national level are replicated within SADC. In all three NRM sectors there is a certain degree of "reinventing the wheel". This is especially true for CBNRM activities for which the WSTCU has lessons learned that can be applied to forestry and fishery (and vice versa).

Duplication of effort is especially disheartening when the limited capacity (infrastructure, staff and equipment) of the units is considered. Both the WSTCU and FSTCU are supported by donor assistance (USAID and GTZ/DED respectively).

In general, multi-sectoral co-ordination is a much-stated necessity in development. The SADC Tourism protocol draws attention to this fact:

> *"Recognizing that for sustainable tourism development to become a reality, the increased cooperation and facilitation from the sectors responsible for immigration, transport and aviation, information, trade and local government, is fundamental to the full realization of this Protocol."*
>
> (SADC, Tourism Protocol, 1998)

Unfortunately in this specific incidence, the NRM sectors are not mentioned among the sectors to be co-ordinated with sustainable tourism development.

In TBNRM there is a critical need for co-ordination and partnerships across both physical and technical boundaries. Any given TBNRM initiative might require decisions and actions in tourism, transport and communication, industry and trade, and in any of the eight FANR sectors (wildlife, forestry, livestock, ELMS, etc.). The prevailing question is how this co-ordination is to take place on a regional level when there are difficulties accomplishing co-ordination at national levels? As discussed in the previous section on policy, one senior government officer in the region voiced the idea that, due to its multi-sectoral nature, SADC should consider a specific umbrella TBNRM Protocol that is recognised by, and supported by the many relevant sectors.

Co-ordination of SADC NRM sectors

> *"(The three NRM TCUs) have a great responsibility to attempt to provide clear and concise guidance for the management of the region's natural resources and ecosystems, especially those that are trans-boundary in character"*
>
> (SADC, Forestry, Fisheries and Wildlife Consolidation Proposal, 1997, p.3, emphasis added)

Since 1980, Malawi has been responsible for coordinating the management of natural resources and ecosystems across member states in the Inland Fisheries, Forestry and Wildlife (IFFW) Sectors. Levels of co-ordination have varied over the last two decades. The units are said to have appeared to have "some sense of cohesion" between 1988-1992; but have since gradually drifted away from solid forms of integration towards "sporadic acknowledgement and collaboration" (SADC, 1997). Difficulties in collaboration are said to have suffered more since the 18th of July, 1997, when ministerial changes reorganised the Ministry of Natural Resources (MNR), in which the three units were housed. The Ministry was split into two ministries: the Ministry of Forestry, Fisheries and Environmental Affairs (still maintaining Fisheries and Forestry) and the Ministry of Tourism, National Parks and Wildlife (wildlife sector). The recent change puts into question the often-floated idea of streamlining and consolidating the three TCUs in Malawi into one unit (see Joint IFFW TCU Task Group, April 1997 report).

3.4.2 SADC capacity and resources

Funding for SADC is constrained by a dependence on donor funding for programs and projects, and by limited financial contributions from member states. Unless clear net benefits are seen by member states, there is reluctance to use limited national resources (see 3.4.3 below and section 3.5 on economic situation in SADC) to fund regional, as opposed to national, programs. Hence, SADC is hindered by a lack of capacity to take on its defined objectives, roles, and responsibilities.

Beyond limited SADC funding, the operations of a given sector TCU (e.g. Wildlife, Fisheries or Forestry) are the responsibility of the sector's host country. Individual sectors and their programs may be supported through donor funding. However, a given sector's ability to implement its regional agenda depends heavily on the capacities of the sector's host country. As identified in 3.4.3 and 3.5 there are significant differences within the region in terms of economic growth and ability to finance SADC TCUs. For example, as Malawi is under a great deal pressure to achieve its own national programs, it is not surprising if it is unable to provide resources to regional initiatives. Staff responsible for the SADC WSTCU are often co-opted from their SADC responsibilities to deal with "urgent" national matters. Somehow Malawi is forced to try to balance both concerns.

3.4.3 National capacity and resource levels

This section makes particular reference to the wildlife sector in terms of national organisational capacity. By focusing on one sector we are able to get a fairly accurate representation of the overall government organisational situation, especially with respect to other NRM sectors. This analysis of government organisations is also informative to highlight the differences in capacity and resources around the region.

Human Resources

In general, there is a shortage of human resources throughout the region. An attempt to quantify this shortage can be made by looking at figures for the "ideal" number of staff required to properly manage a protected area. It is suggested that a density of law enforcement staff required for areas with elephants is estimated at 1 staff:50 km^2 and 1 staff:20 km^2 for areas with rhinos (Bell and Clarke, 1984). In the region, the amount of protected area that each field staff person is responsible for differs significantly. Some country staffing patterns are dramatically outside of "acceptable" human resource levels. For example, the area per person for Angola is 2,000 km^2, Mozambique - 1,133 km^2, Botswana - Northern Parks - 151 km^2, and Tanzania - Game Reserves 152 km^2 and National Parks 109 km^2 [19]. Mozambique, and to some extent Angola, have already begun increasing staff numbers significantly and will continue to do so over the next few years. On the other hand, a few countries that appear to have adequate law enforcement staffing levels include: South Africa - Natal (4 km^2/person)and Kruger (10 km^2), Zambia (21 km^2), Zimbabwe (34 km^2) and Malawi (57 km^2) (see table 3.4.1).

[19] Another system for estimating the number of staffing required is determined by a staff number equal to the square root of the size of the protected area, thus a protected are of 100km2 would require 10 (1:10km2) enforcement staff and an area of 10,000 would need 100 (1:100km2) (ULG, 1998, p.10). Very roughly, minimum staffing required could be made by taking the square root of the overall protected area size compared to actual staffing level: Angola (282 vs. 40), Botswana (151 vs. 131), Malawi (104 vs. 191), Mozambique (256 vs. 58), SA Natal (53 vs. 730), SA Kruger (141 vs. 2,000), Tanzania NP (198 vs. 359), Tanzania GR (248 vs. 405), Zimbabwe (217 vs. 1,380) and Zambia (252 vs. 3,000).

Although it would appear that a good part of the region has sufficient staffing levels, staffing numbers do not present a clear impression of the situation in regard to the quality and efficiency of those human resources. Throughout the region there is the problem of having many very low paid staff. This can, at times, be worse than having fewer staff altogether. Due to the lack of employment opportunities in many of the SADC countries, people are willing to work for very low salaries (and then these individuals are considered the lucky ones). As one senior government officer clearly stated, some government departments are more like social welfare systems for their employees. Hence, even where numbers are high, it may be an inaccurate representation of capacity as government agencies can employ relatively high numbers of staff with limited budgets (Cumming, 1990, p.38). In some countries in the region, these unrealistically high staff levels are being reduced by more than 50% as retrenchments and down-sizings of government agencies occur, e.g. Tanzania, Zambia, and Zimbabwe. In other countries, (e.g. Botswana and Malawi) hiring in the civil service has been frozen or restricted to lower levels. Angola and Mozambique are the two exceptions in the region as they are adding, or will add, hundreds of new staff (ULG, 1998, p.14).

Besides the overall numbers, staff efficiency then depends on a number of other factors, including: morale (which varies from low to moderate to high), discipline and level of training (Cumming, 1990, p.38). Training differences in the region are also significant, varying from none, to some, to well-organised in-service training facilities.

Another aspect of motivation is salaries; and as shown in the table below, these also vary greatly in the region. Salaries in South Africa (Natal) are the highest, at $1,860/year for Guard Level and $7,830 for Warden Level. If South Africa were taken as the highest in the region (= 100%), the other countries shown would compare to South Africa as follows (guard and then warden level respectively): Zimbabwe 85% and 98%, Malawi 22% and 14%, Tanzania 9% and 4.7%, and Mozambique 8% and 4.6%. In the field, the difference can be seen where on one side of the border the guard is driving around in a 4x4 with a clean, new looking uniform and equipment, while on the other side the guard is on foot, poorly shod with a tattered uniform or T-shirt and hardly any equipment. These differences can cause problems in TBNRM activities as it is difficult for partners to feel "equal" when there is such disparity on either side on the border.

Table 3.4.1 Service conditions in selected Wildlife Agencies in SADC

Country	Salaries (US $/year) Guard Level	Salaries (US $/year) Warden Level	In-service Training Facilities	Morale
Malawi	410	1,100	Some	Moderate
Mozambique	150	360	Occasional courses	Variable
S. Africa (Natal)	1,860	7,830	Well organised	High
Tanzania (N.P.)	170	370	Some	Low
Zimbabwe	1,580	7,660	Some	Variable

(Source: Adapted from Cumming, 1990, p.39)

Material Resources

Human resource shortages are compounded by shortages in material resources (equipment, vehicles, firearms and radios etc...). For example until recent donor contributions, Mozambique had 1 vehicle per 8,212 km^2 of protected area. In many countries, larger amounts are spent on salaries (staffing) then operational budgets. This imbalance leads to management difficulties. It is recommended that recurrent expenditures be equally divided between salaries and operational costs (Bell and Clarke, 1984) (for example in Malawi, operational expenditures account for just 38% of expenditures). There are numerous examples in which staff have equipment and vehicles (often from donor projects that have ended), but lack sufficient funds to cover fuel costs and upkeep. Another typical example is one park in which an electric fence was set up to keep problem animals away from fields; the fence no longer works as the distilled water required to keep the solar battery running could not be purchased. When the fence failed to function, it was cut up into pieces and used by the local communities.

Financial Resources

Generally, financial resources in the region are insufficient. An estimate of minimum level of recurrent expenditure that wildlife agencies need to adequately protect areas is $200/km2/year. Most of the countries in the SADC region do not reach this funding level. The differences in the region are striking (see table 3.4.2): Zimbabwe is just below this minimum level, Malawi is 75% below it, Tanzania is 91% below it, and Mozambique is 96.25% below the minimum. In contrast, the Natal Parks Board (now KwaZulu Natal Nature Conservation) in South Africa has recurrent expenditures 22 times greater than the minimum, a level that exceeds budget levels in many western countries. Not only does this show the insufficient level of financial resources for some countries, but it highlights the huge difference in resources available in the region.

Table 3.4.2 Indicators and comparison of resources available to government agencies for conservation

Country	Area km2 Protected (1)	Total Budget (US$ x 1,000) (2)	Operational Budg. (US$ x 1,000) (3)	Total Field Staff (4)	Vehicles: 5 Ton Truck	Vehicles: 4-wheel dr	Total Budget/km2	Operational Budget/km2	Km2/staff	Km2/ vehicle
Angola	80,000	N/A	20	40	0	0	N/A	4	2,000	N/A
Botswana (North. Parks)	23,000	N/A	N/A	175	N/A	N/A	N/A	N/A	131	N/A
Malawi	10,800	526	198	191	14	22	49	1,037	57	300
Mozambique	65,700	448*	N/A	58	2	6	7	?	1,133	8,212
South Africa (Natal)	2,800	12,182	2,727	730	82	93	4,350	3,736	4	16
South Africa (Kruger)	20,000	N/A	N/A	2,000**	N/A	N/A	N/A	N/A	10	N/A
Tanzania National Parks	39,100	700	450	359	16	58	18	1,253	109	528
Tanzania Game Res.	61,665	N/A	N/A	405**	N/A	N/A	N/A	N/A	152	N/A
Zambia	63,585	N/A	N/A	3,000**	N/A	N/A	N/A	N/A	21	N/A
Zimbabwe	47,000	9,117*	2,455	1,380	57	121	194	1,779	34	264

Notes: (1) May not be total area reserved for wildlife conservation in the country, but just the area of the specific wildlife agency that provided information.
Total annual allocation (mostly for 1986) for salaries, travel allocation (vehicle running costs, subsistence, etc.)
Total annual allocation for travel/subsistence and recurrent costs only.
Excludes head office staff and casual laborers.

* The budgets might now be lower for some countries and higher for others a comparison between 1981 and 1987 figures showed that Mozambique budgets had declined from $600,000 to $400,000 and Zimbabwe had declined from $13,000,000 to $9,117,000. Since 1987, the budgets could have continued to decline, though in the case of Mozambique they might actually have begun to recover.

** For these countries the staff numbers are total so represents more staff than for the other countries.

*** Data for Angola, Botswana, Kruger, Tanzania Game Reserves and Zambia are more recent 92-97. Some figures for countries have changed, most notably Mozambique has increased staff significantly and Zimbabwe staff was almost double, though they are trying to reduce that figure back by 50% now.

(Source: Adapted from Cumming, 1990, p.40 and additions from ULG, 1998 — over-flows from previous page

3.4.4 Dialogue capabilities and co-ordination efforts

Due to the centralisation of decision-making in most countries in the region, dialogue between government agencies that need to work with one another across boundaries is hindered. Although the agendas of local level organisations might be similar, their corresponding national institutions might have differing priority concerns. Problems of communication between vertical interest levels increase as issues are translated from local to national levels, and again as issues are addressed at transboundary and regional levels.

TBNRM is a multi-sectoral issue requiring horizontal co-ordination between sectors on two or more sides of a boundary. Again, the complexity of dealing with multiple sectors nationally increases in transboundary situations. In many countries in the region the management and authority over natural resources is severely fragmented. This division leads to duplication of efforts and possible conflicts between institutions. Luckily, some countries in the region are beginning to plan to review the legislative situation with the aim to reorganise and streamline NRM (e.g. Botswana, CBNRM Policy, 1998, p.6). The Botswana 1990 Environmental Policy emphasises „the importance of developing linkages between the different natural resources" (1990, p.6).

3.4.5 Other regional organisations

Other Regional Government Organisations

In addition to SADC and national government organisations there are some good examples of regional organisations developed around specific natural resources. The first conservation related TBNRMA is about to be formally established between Botswana and South Africa in the Kalahari Gemsbok and Gemsbok National Parks (see 3.3.8), where the Kgalagadi Transfrontier Park Foundation is being formed to be responsible for the direction of activities within that park. Other prominent examples are found in the water sector, in which transboundary issues have long standing and recognised importance in the region. Several River Basin Authorities deal with TBNRM and with bi- or multi-national agreements and partnerships. Those authorities include:

Cunene River Basin Joint Technical Commission: concerned with the Cunene River (which flows between Angola and Namibia), and focuses on waterpower issues.

Komati Basin Agreement: a tripartite committee for the Komati River Basin with representatives from Swaziland, Mozambique and South Africa.

Lesotho Highlands Water Project: concerned with the Upper Orange River Basin and water resource issues between South Africa and Lesotho (this is not on the Drakensberg side).

Limpopo River Permanent Technical Committee: is concerned with the Limpopo River and includes Botswana, South Africa, Zimbabwe and Mozambique.

Namibia-South Africa Permanent Water Commission: addresses shared water resources.

OKACOM: a trilateral commission between Namibia, Angola and Botswana concerned with

environmentally sustainable development of shared watercourses, in particular the Okavango River.

Secretariat for Eastern African Coastal Area Management (SEACAM): assists Eastern African coastal countries to implement and co-ordinate coastal management activities. Mozambique, South Africa and Tanzania are in the Reference Group.

ZACPLAN: developed to foster regional cooperation among the Zambezi basin countries. The plan emphasises environmentally sound management of the areas water resources (see 3.3.4).

Zambezi River Authority: joint authority between Zambia and Zimbabwe, mainly deals with the power sector and management of the Kariba Dam and Reservoir.

Following the signing of the SADC Protocol on Shared Watercourses there will likely be more agreements made and organisations formed. Some of those might include the following River Systems: Pungwe and Save River (Zimbabwe and Mozambique), Shire River (Malawi and Mozambique), Ruvuma River (Tanzania and Mozambique) and Songwe River (Malawi and Tanzania) (for more information on the Water Sector see Stanley Consultants, 1998, section 6).

Other regional, NGO, donor and private sector organisations

This section refers to a few of the more regionally focused organisations that may be able to assist with the development and management of TBNRM initiatives. The following is not meant to be an exhaustive list, and it is recognised that there are numerous organisations that are not included in the brief list provided. Many of the NGO, donor and private sector organisations involved or interested in TBNRM are also described in section 3.5.2.

Blanchard Mozambican Enterprises: An American company that has become involved in the development and management of an area in southern Mozambique that includes the Maputo Elephant Reserve. The company is interested in Mozambique-South Africa transborder issues as its concerns border South Africa.

Global Environment Facility – GEF: The GEF has the potential and interest to play a key role in the region in TBNRM. To date, its major involvement is in the Transfrontier Conservation Areas Project (TFCA) in Mozambique. The project focuses on improving the enabling environment (specifically in Mozambique) for improved NRM in three transfrontier conservation areas.

Investimentos Niassa Lda.: A Mozambique company, with additional Scandinavian funding, that has recently become involved in a concession that includes the management of the Niassa Reserve and adjacent lands in Mozambique. The area borders the Ruvuma River and Tanzania, and is an area of local TBNR activities.

IUCN-ROSA – World Conservation Union-Regional Office for Southern Africa A membership organisation to which many of the government and non-governmental organisations in the region belong. Many of IUCN-ROSA's activities contribute to TBNRM. In its recent regional meeting of members (September 1998), a regional strategic plan was approved that included the objective: *"to promote and facilitate a transboundary approach to natural resource and environmental management".*

PPF – Peace Parks Foundation. As its name indicates, PPF's primary objective is TBNRM related (see 3.5.2). The PPF has been assisting in various transboundary activities in the region and has served as a catalyst to an important variety of initiatives. It has a clear TBNRM agenda, and is well positioned to support future TBNRM development in Southern Africa. It still has to gain acceptance in some quarters in the region in order to attain its full potential. PPF staff are working towards this goal. Further information on PPF's work is given in section 3.6.2

SASUSG – Southern African Sustainable Use Specialist Group a volunteer organisation established under the auspices of the World Conservation Union Specie's Sustainable Use Initiative, part of IUCN's Survival Commission (IUCN/SSC). Many of the members are staff of other environmental organisations in the region. SASUSG has recently established a working group on Transfrontier Conservation Areas (TFCA WG).

Southern African Traditional Leaders' Council for the Management of Natural Resources Established at the Victoria Falls NRMP conference in 1997. Twenty-three (23) traditional leaders from 5 SADC countries established the council. Although this initiative has not been adequately followed up on since the 1997 meeting, it has as its vision „*that indigenous members of the southern African community come to understand the need to manage natural resources wisely and sustainably, through the processes of traditional systems and knowledge, and thereby improve the quality of life of all people*".

USAID – RCSA United States Agency for International Development – Regional Center for Southern Africa: In its 1998 Strategic Plan Mission Statement, the RCSA's focus includes the goal "*to support regional initiatives to promote an integrated market, strengthen democratic principles and manage the region's resources in a sustainable fashion*" (USAID-RCSA, 1998). The RCSA has a Special Strategic Objective to "*Increase regional capacity to manage transboundary natural resources*". In the area of TBNR, the RCSA has conducted a study of water resource management and this study on transboundary conservation areas.

WWF SARPO - World Wildlife Fund, Southern Africa Regional Programme Office With its focus on management of priority ecoregions, there are numerous TBNRM overlaps with this organisation's objectives and activities as many ecoregions cross national boundaries.

3.5 Current economic environment in the SADC Region

3.5.1 Background

As a region, SADC faces some considerable challenges for economic development. At the same time, the current economic environment offers some exciting opportunities for TBNRM development. To take advantage of these opportunities it is necessary to have an understanding of some of the broader current issues in the region.

At present, political instability represents a major threat to the regional economy. Angola and the Democratic Republic of Congo (DRC) are currently engaged in serious civil conflict, while Lesotho is recovering from recent turmoil. This instability has the potential to spill over into other neighbouring countries, and has also led to disagreements between certain SADC

governments. Zimbabwe is actively supporting the DRC government in its attempt to retain power, whereas other SADC governments (e.g. South Africa) have different positions.

Table 3.5.1 Selected 1997 data from relevant SADC economies

Country	*Population*	*GDP*	*Exports*	*Imports*	*Growth*
Angola	11.7	7726	4000	2500	5.9
Botswana	1.5	4740	1800	1087	6.9
Lesotho	2.2	892	200	1023	3.5
Malawi	12.4	2397	498	360	5.3
Mozambique.	16.5	1944	217	767	6.0
Namibia	1.8	1274	1725	1907	1.8
S. Africa	43.0	114939	30378	28399	1.7
Swaziland	1.0	2034	561	743	3.8
Tanzania	30.0	6854	542	1141	3.3
Zambia	9.8	3720	868	777	3.5
Zimbabwe	12.3	5784	1622	1776	2.0

Source: Official SADC figures[20]

Political instability discourages foreign investment, which is greatly needed to boost the region's economy. The regional per capita GDP has declined from US$ 918 per person in 1990 to US$ 881 in 1997 (SADC figures). Within the region there are large disparities in prosperity. Per capita GDP differs greatly in magnitude between richer countries such as Botswana (US$ 3,160) and South Africa (US$ 2,672) and less prosperous countries such as Malawi (US$ 193) and Mozambique (US$ 117). Growth rates vary too. Interestingly, the two fastest growing economies are those of the most prosperous and least prosperous countries: Botswana's economy grew at a rate of some 6.9% in 1997 and Mozambique's at 6.0%. By contrast, South Africa only grew at 1.7%, Namibia at 1.8% and Zimbabwe at 2.0%.

While these national differences in economic prosperity and growth rates present significant challenges for regional economic integration, they also present a compelling reason to encourage steps towards integration.

One of the largest constraints to regional integration is the disproportionate size of South Africa's economy. Other SADC countries feel somewhat threatened by this disparity. Where South African corporations are keen to expand their interests in the region, domestic companies in other countries seek a degree of protection. Conversely, South African workers are keen to protect themselves from immigrant laborers from other SADC countries who are prepared to work for far lower wages. Ultimately, freer trade and movement of people would benefit the whole region; however, there are protectionist and vested interests lobbying against greater integration.

Table 3.5.1 illustrates some of the above points. In addition, SADC economies generally share the following characteristics:

[20] Figures for population are in millions. Figures for GDP, exports and imports are in US$ millions. Figures for Growth are expressed as GDP percentage growth. Stability reflects author's personal assessment of economic stability (as influenced by current political factors)

- **Basic livelihood needs** such as food security and primary health care are priority issues.
- Most SADC economies are **heavily reliant on commodities**, i.e. mining. In recent years, commodity prices have been declining, as are accessible mineral reserves. Mining is not indefinitely sustainable.
- Agriculture is a mainstay of most SADC economies. Many rural people rely on subsistence farming to survive. Commercial agriculture is well developed in countries such as South Africa, Zimbabwe, Namibia and Botswana, but has been heavily subsidised in the past. Such **subsidised agriculture is seldom sustainable;** most of these countries have predominantly arid environments, in which unsubsidised agriculture is largely nonviable.
- Most SADC economies have **high rates of inflation;** in 1997, the regional average inflation was 18.7%.
- **Other related problems** include low productivity levels, low levels of foreign reserves (with Botswana being a notable exception), high budget deficits, and weak institutional capacity.
- Many economies are being subjected to rigorous **structural adjustment programs** imposed by institutions such as the International Monetary Fund (IMF). Such programs call for major trade reforms, downsizing of government, privatisation, debt restructuring, monetary policy reform, and devolution of power to local authorities.
- **Financing and investment is a major problem.** Governments have limited financial resources, and as a result many have weak institutional capacity, poorly paid staff, capital scarcity and inadequate infrastructure. The situation is aggravated by a low level of private sector investment. This makes governments overly dependent on donor funding, which is, in itself, problematic. Different donors do not always co-ordinate their activities, resulting in inefficient allocation of resources.

3.5.2 Tourism potential

With its considerable tracts of pristine natural areas, the SADC region has a global competitive advantage in the provision of nature and its associated industries such as nature-based tourism. The potential of the tourism industry is widely recognised. Globally, travel and tourism is the world's largest industry, accounting for 11% of the GDP of the World's Economy in 1995 (SA DEAT 1996). In the SADC region, the contribution of tourism is much lower; for example, in South Africa (which attracts over half the region's visitors) the contribution was only 4% of GDP in 1995. According to the World Tourism Organisation, world receipts from tourism grew from US$ 267.6 billion in 1991 to US$ 337.1 billion in 1994, an increase of 26%. During this time, the SADC's share of the world total only grew by 14%, from US$ 1.6 billion to US$ 1.8 billion – only 0.53% of the world total. This suggests that there is considerable potential for growing this sector of the economy

Tourism provides certain attractive advantages over other forms of industry. First it is labour-intensive and therefore a good creator of employment (WTTC 1998). Second, it is a high generator of foreign exchange – in 1994 tourism earned more than 30% of the world's total export services. Third, appropriately managed tourism can be compatible with conservation efforts and can generate funds needed to manage protected areas, as well as uplift local communities in isolated rural areas.

Within the region there is a much expressed desire to address the potential for growth in the tourism sector. For example, the SADC member states have established a regional tourism

marketing organisation called Regional Tourism Organisation of Southern Africa (RETOSA). In South Africa, the government has outlined a strategy to encourage the growth of "responsible tourism". The private sector has recently joined forces with government to create a massive fund to market the country.

There are certain obstacles to developing the tourism industry in the region. Health and security are two major concerns to potential overseas visitors and need to be addressed. Additional problems include the lack of tourism infrastructure in certain areas, and high costs in air travel and in other sectors. These are issues that need to be addressed at both national and regional levels.

Can the region's tourism potential be realised? Provided the above obstacles are addressed, there are good reasons to believe that it will. The relative profitability of mining enterprises is declining, and subsidies to conventional agriculture (a form of land-use that competes with and displaces wildlife and natural areas) are being reduced. These trends will ensure that the relative economic importance of nature-based tourism will increase – even if current visitor levels remain stagnant.

3.5.3 SADC policy issues

The potential for developing nature-based tourism in the region, especially in conjunction with transboundary initiatives, must also be seen in the overall context of the SADC and its policies (see 3.3.2). There are still many issues of national vested interests and protectionist tendencies; however, the overall trend within the region is towards greater regional co-operation and freer trade.

The stated goals of SADC that relate to enhancing the economic environment, include:

- to harmonise macro-economic policy,
- to increase the pace of privatisation,
- to encourage private-public sector partnerships,
- to create an enabling regional investment and trade environment supportive of enterprise,
- to rationalise and harmonise various investment policies, codes and mechanisms, and
- to promote cross-border investment and payment mechanisms.

It is clear that there is much political support for the basic tenets of sound conservation management at the regional level. This support originates from both the public and private sectors, and is expressed in official SADC policy.

3.5.4 Private sector and NGO motivations in regards to TBNRM

There is a broad spectrum of private sector and NGO interest in the conservation and tourism sectors, with motivations that range in nature from philanthropic and long-term, to strictly commercial and short-term. The philanthropic end of this spectrum is represented by NGOs and certain wealthy individuals, whereas the strictly commercial end of the spectrum is represented by local entrepreneurs and large corporations. In reality, most interested parties are motivated by a combination of philanthropic and commercial objectives, though this is not widely recognised.

Private sector agents and NGOs are motivated to :

- Support nature conservation (for aesthetic and other reasons)
- Support sustainable industries
- Support industries that create new jobs and uplift disadvantaged people
- Invest in activities with the above attributes, to gain financial and "psychic" returns (i.e. the "feel-good" factor; positive existence values)

To the extent that TBNRM furthers the development of conservation and related industries, it will be in demand by the private sector. Some of this demand is simply based on existing demand for conservation, but there is also demand for some of the incremental benefits of TBNRM. This is clearly demonstrated by the level of private sector support for the South African-based Peace Parks Foundation, an NGO set up specifically to promote the developments of TFCAs.

Specific aspects of TBNRM that appeal to the private sector are:

- The creation of larger conservation areas with improved infrastructure, better management and greater market appeal. Such areas have the potential to offer a range of new business opportunities to private agents; better and easier access to new areas and easier ways to market them.
- The potential reduction/elimination of barriers to travel and trade across national boundaries (e.g. faster/simpler customs and immigration formalities). Reduced barriers will enable private agents to conduct their business more efficiently, thereby increasing opportunities for profits.
- Enhanced opportunities to invest or conduct business across national boundaries (by harmonisation of laws concerning tour operators, private developers, etc). Similarly, this will expand the range of options to, and profitability of, private ventures.

It is important to note that although many private agents express verbal support for the development of TBCAs, fewer agents are currently willing, or able, to back up words with significant action. This seems to be especially true of the smaller commercial operators, who are preoccupied with practical day to day issues, and for whom TBCAs are a potentially useful, but by no means essential, supplement to their working environment. Nonetheless, such smaller operators eagerly anticipate outside initiatives that will catalyse the TBNRM process and will ultimately bring about the anticipated benefits.

When it comes to translating expressed demand into action and investment at this stage, it is wealthier individuals and organisations (many of which are based outside southern Africa) that are most likely to contribute directly to TBCA development. Even so, it is worth noting that the Peace Parks Foundation intends to raise much of its major project funding from government and multilateral donor agencies rather than from private sources, which appear to be more limited.

It appears that the commercial private sector will provide greater support to TBCA development once certain enabling mechanisms have been put in place. For example, certain large infrastructure developers look to mechanisms such as the South African Spatial Development Initiatives (SDI's) and the Industrial Development Corporation's Ecotourism Fund (a concessionary lending facility) to create and facilitate investment opportunities. Smaller and more local agents tend to take advantage of specific initiatives as, and when, they materialise.

An important aspect of both private sector and NGO support is a sincere overall concern that future TBNRM initiatives are structured to ensure that local communities are fairly

treated. Most agents would like to see communities empowered to benefit both directly and indirectly from the natural resource base. For more information on direct and indirect benefits from TBNRM, please refer to **APPENDIX 3:** Total Economic Value (TEV).

Ultimately, private sector support for TBCAs will depend to a large extent on whether governments create the right enabling environment – i.e. an appropriate package of incentives for the private sector to engage in the TBNRM process. SADC policies show promise in this regard, but it is national governments that need to take the lead to make this a reality.

3.6 TBCA & TBNRM developments in Southern Africa

3.6.1 TBCA & TBNRM developments in the region

To date many different initiatives have occurred in the region under the broad definition of TBCA (where protected areas are involved). Initiatives have started in several different ways. Early efforts often involved informal collaboration at the local level between protected area staff. For example, Zambian and Malawian staff of the Nyika National Parks collaborated many years ago over activities such as joint burning programs and permitting law enforcement teams to cross the border and make arrests on the other side. This collaboration has since ceased, though discussions are underway to reintroduce a similar system. Management staff of Gemsbok National Park in Botswana and the Kalahari Gemsbok National Park in South Africa started collaborating informally in 1948 over certain management issues (e.g. animal census). This arrangement continued for many years, and in 1992 the two countries decided to start a process of formalising it with the establishment of the Kgalagadi Transfrontier Park (see discussion in 3.3.8). The two countries have since established a Transfrontier Management Committee , prepared joint management plan, established a Transfrontier Foundation and will shortly sign a formal Bilateral Agreement and record of understanding.

Informal collaboration between protected area staff as outlined above is probably easiest when it involves protected areas on both sides of the border with similar management objectives, and no other land use categories are involved. In the early days these cases did not involve high-level diplomatic moves; and while they were limited in what activities were possible, they seem to have served the purpose well at the time.

Formal approaches to TBCA development have started to occur more recently, as in the case of the Kgalagadi Transfrontier Park, which is the most highly formalised arrangement in the region to date. At this stage, central government wildlife staff have become involved, as have other ministries (e.g. customs and immigration authorities and the Attorney General). The role of central government features more prominently when dealing with multiple land use types rather than with simple protected area situations; and always when arrangements need to be more formalised (e.g. the Kgalagadi). One example of a more formalised approach is that of the Drakensberg/Maloti Mountains on the South African/Lesotho border, where cooperation has occurred since 1982. To date, an intergovernmental liaison committee exists, mainly it address water affairs. In addition, a Memorandum of Understanding for TBCA management has been prepared and a joint co-ordination unit is planned. The unit's activities will include consultation, technical studies and proposals for TBCA development. On the Lesotho side, there are also plans to

establish protected areas and managed resource areas in collaboration with local communities; these efforts will also address necessary capacity building.

Another recent example concerns the areas covered by the GEF Transfrontier Conservation Areas and Institutional Strengthening Project in Mozambique. Mozambique aims to collaborate with Zimbabwe and South Africa to promote development of TFCAs in: Maputaland (including Maputo Special Reserve in Mozambique and Tembe Elephant Reserve and Ndumo Reserve in South Africa); Gaza (including Zinave and Banhine National Parks and Hunting Area (Coutada) 16 in Mozambique; Kruger National Park in South Africa; and Gonarezhou National Park in Zimbabwe); and the Chimanimanis (including Chimanimani National Park in Zimbabwe).

International collaboration started with informal meetings between Mozambican and South African officials. South Africa and Zimbabwe formed a joint committee. A tri-national meeting has been held recently by the three countries. Limited collaboration is occurring on the ground (for example, so far assistance to Mozambique from South Africa with law enforcement and the conducting of joint surveys). Many plans are being made for the future; however, Mozambique needs time to rehabilitate its protected areas after the war. Special provisions are being made to promote CBNRM. As in the Lesotho case, there is a complex range of land tenure situations in the three areas, including protected areas, privately owned land, communal areas and a hunting area. One of the communities to be involved is the Makuleke people who have recently regained access to traditional land in the north of Kruger National Park and will derive benefits from it, while maintaining the park's conservation status.

Based on the Kgalagadi model, South Africa and Botswana have started collaboration in the Tuli Block/Limpopo valley transborder areas. In this case, there is the additional aspect that a good portion of the land in the TBNRMA is held by private land owners. It is hoped that Zimbabwe will also become involved; this will add another level of complexity as the land ownership on the Zimbabwe side is mainly communal. The overall benefits of collaboration are to increase conservation opportunities for this marginal ecosystem and extend the range of large mammals. The Peace Parks Foundation is playing a role here as in some of the other areas in the region; in this case it has purchased a farm in the complex in order to change land use away from irrigation.

An initial attempt to create a TBCA between Malawi's Kasungu National Park and Zambia's Lukuzuzi Game Reserve and other lands connecting the two protected areas stalled. This may have occurred because the initiative was led by an NGO and was not seen as coming from the Zambian government; Malawi authorities did not become involved. However, the two countries still recognise that there is potential for collaboration, and Zambia has recently created a corridor linking the two protected areas.

In the Lower Zambezi National Park in Zambia and Mana Pools National Park in Zimbabwe, agreement has been reached between the wildlife authorities for some joint operations such as aerial surveys and following illegal hunters across the border. In the Caprivi area, collaboration over shared wildlife populations has been initiated through the removal of a section of veterinary cordon fence along the Namibia/Botswana border. In addition, Zambia is also keen to become involved in international collaboration in the area.

TBCA development is not limited to terrestrial ecosystems. Discussions have been held by Malawi, Tanzania and Mozambique about joint management of Lake Malawi. The Governments of Zambia and Zimbabwe have been collaborating for many years on a

cooperative program for Lake Kariba (the latter in part assisted with Norwegian Agency for Development Cooperation (NORAD) funding).

The above discussion has focused largely on TBCA experiences in the region, where the collaboration is mainly either between protected areas, or involves arrangements between governments for the joint management of natural resources, especially wild mammals and water. Moving to TBNRM the experience is broader. As outlined in section 3.2, much informal use of natural resources occurs in border areas and has done so for many decades. Where movement of local people is not prevented, and where there are cultural ties across borders, there are often economic trade links based on locally harvested natural resources whose supply/demand situations are unequal on opposite sides of the border. This occurs, for example, with production of palm wine in the Futi Corridor area in southern Mozambique and its sale in South Africa (Pollett *et. al.*, 1996). Fuelwood often moves across borders, for example from Gaza in Mozambique to Kruger National Park; from land east of Lake Malawi/Niassa in Mozambique to Malawi islands on the east side of the lake; and from forest areas in Mozambique to the east of Mulanje Mountain in Malawi. Since much of this trade is informal, its scale is unknown; but it is probably substantial and plays an important role in the economies of the local transboundary communities concerned.

An example from Malawi demonstrates the importance of taking the transboundary socio-economic situation into consideration in CBNRM projects rather than working in isolation in one country alone. A project to promote beekeeping by local communities living on the boundary of Malawi's Nyika National Park ultimately failed, in part, because people living across the border in Zambia were not allowed to participate. Since they were not gaining benefits and yet had close cultural and economic ties with the communities in Malawi, they stole the honey. Had communities from both sides of the border been able to benefit from the scheme, perhaps with the Zambian Nyika National Park also participating, the outcome might have been different. A new CBNRM project on the Malawi side of Nyika and Vwaza is working to address this transboundary issue. The situation in Nyika-Vwaza is an interesting one, since the communal area there overlaps the boundary and Chief Chikulayamemba has constituents in both countries. Hence, his people in Zambia are often unofficially involved in resource harvesting in the Protected Areas in Malawi that are part of the CBNRM initiatives in that country.

In summary, experiences in TBCA and TBNRM in Southern Africa have been many and varied. Until recently they occurred on an individual, ad hoc basis, with relatively little communication between different initiatives and, hence, little sharing of experiences and lessons learned. Dialogue has greatly increased in the last few years with the establishment of the Peace Parks Foundation, the holding of an international meeting on Peace Parks in Somerset West in 1997, and by the formation of the Southern African Sustainable Use Specialist Group's Working Group on TFCAs. A large amount of enthusiasm for, and ownership of, the TBCA/TBNRM concept has developed in most of the countries covered by the study. However, the learning curve is very high. While there is experience of informal collaboration between protected areas and community level cross border natural resource trade, to date there is less in the way of formal agreements.

3.6.2 Donor involvement in TBCA & TBNRM in Southern Africa

Undoubtedly, the Peace Parks Foundation (PPF) is the best known organisation addressing transborder conservation in Southern Africa. PPF's primary objective is "to promote

transfrontier conservation, 'peace parks' in Africa". PPF is working on seven TFCA's along South Africa's borders. In addition, PPF is investigating TFCAs along Lake Malawi and some of the more northerly great lakes. PPF's projects are varied and range from purchasing land, infrastructure development, and land surveys as well as building regional capacity through courses at the Southern Africa Wildlife College. In the soon to be formalised Kgalgadi TBCA, PPF assisted in capacity building in Botswana, building of the joint visitor gates, and a vegetation study (Botswana). On a broader scale, PPF and IUCN sponsored the Parks for Peace Conference in Cape Town in 1997. The conference served to bring discussion of a global issue into the SADC region.

The next most visible donor dealing with TBCA's is the Global Environment Facility. The GEF is one of the few international donors that have a number of projects specifically designed to address transboundary and regional conservation issues. The variety of GEF projects is outlined here in some detail. Two such projects concentrate on transboundary projects in East Africa between Kenya, Uganda and Tanzania. These projects are: (1) Reducing biodiversity loss at cross-border sites in East Africa (GEF/UNDP) - the project focuses on combining traditional and modern perspectives on a range of issues that pertain to natural resource management and decision making; (2) Lake Victoria Environmental Management (GEF/WB, Executing agency – Kenya, Tanzanian and Ugandan National Secretariats for the Lake Victoria Environmental Management Program) – the project addresses the major threats (pollution, invasive species, over fishing, etc) facing the Lake Victoria ecosystem. A third project - Institutional support for the protection of East African biodiversity (GEF/UNDP, Executing Agency - FAO) - supports existing government and non-governmental organisations to enhance their capacity to deal with biodiversity conservation. Another GEF/UNDP project is funding a transboundary study in Tanzania, DR Congo, Burundi and Zambia on " Pollution control and other measures to protect biodiversity in Lake Tanganyika". This five-year project aims to improve understanding of ecosystem function and the effect of stresses on the lake system. The project will assist in coordinating efforts to control pollution and prevent biodiversity loss.

Two additional GEF projects address transboundary issues through individual governments. In Mozambique, GEF/WB, in the National Directorate of Forestry and Wildlife and the Ministry of Agriculture and Fisheries, is supporting three TBCAs that are contiguous with national parks and other conservation lands in Zimbabwe and South Africa 9see section 3.6.1).

In a separate but complementary project, GEF/World Bank is funding Biodiversity Conservation in Southeast Zimbabwe. The project is run through the Department of National Parks and Wildlife Management, Ministry of Environment and Tourism. The project aims to design and implement a natural resource management program for Gonarhezou National Park which borders both Mozambique and South Africa (this project was approved in mid-1998).

The GEF also funds two projects that focus on SADC countries. These are:

(1) Southern Africa biodiversity support program (GEF/UNDP). This is run through SADC to assist countries to collaborate with, and build capacity between, neighbouring states in the implementation of the Convention on Biological Diversity (CBD)

(2) Inventory, evaluation and monitoring of botanical diversity in southern Africa: a regional capacity and institution building Network (GEF/UNDP) – the project is working to develop networking capability and build capacity among 10 SADC countries to inventory

and monitor botanical species within the region's diverse vegetation communities.

With regard to watersheds, the Canadian International Development Agency (CIDA), with IUCN, is funding a broad regional project: the Zambezi Basin Wetlands Conservation and Resource Utilisation Program (ZBWCRUP). The project aims to strengthen the capacity of member states (Angola, Botswana, Namibia, Malawi, Mozambique, Zambia, and Zimbabwe) to provide input to initiatives within the Zambezi drainage basin and region. This is a TBCA project that focuses not on borders but on regional management of an entire river basin.

In addition to these transborder and regional projects, there are a number of donor funded projects that focus on a particular aspect of a TBCA; these projects can play a vital role in forwarding the TBCA's development. For example, the European Union (EU) is funding a community project in Lesotho to assist with land–use planning. The project will assist in developing the community's capacity to voice their issues in the formation of the Drakensberg-Maloti TBCA. Japan International Cooperation Agency (JICA) is planning to fund the co-ordination unit that will discuss and prepare proposals for the TBCA. GEF/WB is currently developing a proposal for the South African side of the project. Co-ordination of donors, in this case the EU, JICA and GEF, is key to funding the variety of issues that need to be addressed in the discussions and actions leading to TBCA formation.

While not originally developed with transboundary issues in mind, there are many donor projects in the SADC region that could be further developed or augmented to have a transboundary focus. The previously mentioned CAMPFIRE in Zimbabwe is a good example. The majority of Communities associated with the CAMPFIRE program are adjacent to, or close to Zimbabwe's international borders. These are ideal areas to initiate efforts in transboundary conservation. The GEF is working with CAMPFIRE associations, along with many other collaborators to address TBCA issues in and around the Gonarhezou National Park, Zimbabwe and adjacent conservation areas in Mozambique and South Africa. USAID has been a major funder of the CAMPFIRE Program with the Netherlands and GTZ funding specific smaller sections.

There are a number of other strong CBNRM projects that may be able to address cross border issues, these include: the Administrative Management Design (ADMADE) Program in Zambia and the Living in a Finite Environment (LIFE) program in Namibia, both of which receive funding from USAID bilateral programs. In addition, there is the Luangwa Integrated Resource Development Project (LIRDP) in Zambia funded by NORAD. GTZ is working in the Nyika National Park area in Malawi, and has begun discussion with officials on both the Zambia and Malawi sides. IUCN (ROSA) provides extensive capacity-building activities with SADC member states. A number of other projects are both on going and under development.

Finally, USAID is currently reviewing its role and comparative advantage in transboundary natural resource management. To date, USAID has played a key role in gathering data from transboundary NRM stakeholders, synthesising the material and then disseminating the information within the region. In 1995, USAID funded a Southern African Regional Water Sector Assessment. The report ranks thirty regional projects for potential donor funding and provides a database of information on water activities in the region. Since it's formation, USAID/RCSA has funded technical assistance as well as studies and workshops to build regional capacity to address water resources issues. The current study is a collaborative effort between USAID/RCSA and BSP to identify and discuss the variety of components needed to promote the development of transboundary natural resource management in the SADC region.

4. Opportunities and Constraints for TBNRM development and management

The regional situation, as presented in Section 3, and additional information from consultations held by the study team, highlight a series of opportunities and constraints for TBNRM development and management in the region. These are outlined below. Opportunities and constraints are presented for 3 stakeholder groups: public sector, private sector and communities.

4.1 Public sector opportunities and constraints

4.1.1 Opportunities perceived by the public sector

The following are the opportunities perceived by the public sector. These issues appear to present a favourable combination of circumstances to assist the progress of TBNRM activities.

National Governments

Enhanced ecosystem management

Transboundary ecosystem management provides significant opportunities for national governments. The value of internationally shared resources increases where collaborative management re-establishes or maintains key ecological functions previously disrupted by national boundaries (e.g. watersheds and river basins).

Benefits of scale in resource management and protection

Scale provides the benefit of synergism, where the whole is greater than the sum of its parts (see principles 5.1). This benefit is especially noticed by the agencies responsible for NRM. Numerous benefits can be seen from direct interaction between staff on either side of the border. These include: shared expertise, shared activities, backstopping (fire management and anti-poaching), and possibly, shared resources.

Opportunity for regional co-operation

The benefits of synergism mentioned above, along with the overall value of regional integration, are seen as opportunity for progress.

Opportunity for problem resolution (more locally)

This benefit can accrue at both a national and at a more provincial or local level. However, the more local levels see the advantage of TBNRM to assist them to resolve ecological, economic or social problems on the ground. This is especially relevant when local areas are very removed from their national capitals and where they may have a greater natural sense of association and collaboration with their counterparts directly across the border. At the local level, people want to be able to move the process forward and get things done. They

see the costs of dealing with closed boundaries, and are therefore more adamant about promoting the TBNRM process, as they can directly see how it will benefit them.

Global recognition

From a national standpoint, being seen as doing the "right" thing is important to governments. Co-operation, partnerships, peace, collaboration and regional integration are all seen positively in the global arena. TBNRM is seen as supporting the internationally recognised principles of democracy, sustainability and efficiency (see 5.1). In addition, TBCAs or TBNRM development provides an individual country a sense with recognition of its conservation efforts by, similar to that gained by designating MAB, Ramsar or World Heritage Sites. The value of TBCAs/ TFCAs is rapidly gaining recognition and popularity.

International investment

Because the TBCA/TBNRM concept is currently popular and has a global recognition factor, it is thought that international investment (commercial, private and donor) will be attracted to TBNRM initiatives. Examples of international interest being converted into investments can be seen in the existing and growing interest in the Peace Parks Foundation, which focuses specifically on TFCA issues; in the TBCA initiatives of the World Bank/UNDP GEF; as well as certain private sector operations.

SADC

SADC supports many national government opportunities in TBNRM issues. By supporting national programs, SADC units assist implementation of SADC's own goals and objectives, which are, in effect, a compilation of the objectives of its member states.

SADC has the mandate to promote TBNRM and regional co-operation

The fact that SADC already has the mandate to promote TBNRM and regional co-operation offers a strong chance for advancing TBNRM initiatives in the region. The foundation exists. However, progress demands that the constraints identified above for SADC can be resolved, and that SADC can play a fuller role within the region.

4.1.2 Constraints perceived by the public sector

The following are the perceived or existing constraints to the public sector's full involvement in the TBNRM process. These issues represent what represses, confines, and restrains the public sector to from forming partnerships and promoting TBNRM.

National Governments

Differences in Capacity

Ability and skills between bordering countries vary within the region. At times these differences are quite significant (e.g. consider the difference in staffing levels between Mozambique and South Africa (Kruger) presented in Table 3.4.2). These differences are seen at times by the groups with greater capacity as hindering their potential to progress

with cross border activities that they feel ready to embark on. In groups with lesser capacity, there is a sense of not being able to participate fully or to be able to control the process (see below).

The most significant problem with the variation in capacity is that it affects the ability, or ease, of making lasting partnerships. Sustainable partnerships are less likely to exist if the parties do not realise the interdependence of the TBNRM process. Parties cannot act alone, but rather, need to work together, even if the process is slow initially while capacity is gained. The most critical problem arises when parties feel that they do not have power or control over the situation; and when they do not consider themselves at an equal level to negotiate, enter into agreements, and see those agreements implemented.

These differences in capacity also occur between the public sector and other stakeholders and cause similar problems.

Differences in Level of Commitment

There is variation in the level of commitment that different countries have for TBNRM issues. Differences in capacity and other factors (see below) can lead to unequal commitment or promise to the process. Unequal commitment is a quick way to sour potential partnerships; problems arise when one party is excited about collaboration and is taking noticeable action towards promoting it, while the other party is not. The process is stalemated when certain countries have the support of their public sector while their neighbours do not.

These differences in level of commitment also occur between the public sector and other stakeholders as well, leading to similar problems.

Lack of resources, especially lack of investment or funding

The public sector feels constrained by its limited resources of information, human/organisational skills and capacity, infrastructure, and finances. Even where TBNRM is a considered important, problems may arise if the public sector has other, more pressing, priorities for its limited government resources.

Lack of capacity and skills

Similar to the above lack of resources, the capacity and skills to be able to initiate and implement TBNRM are often weak or lacking all together. Areas where capacity needs to be strengthened include: organisational skills, communication, facilitation, group dynamics, negotiation, analytical skills to make decisions, business skills, technical NRM skills, networking, and fundraising and proposal writing.

Communication with other stakeholders at all levels is ineffective

Communication must occur in both directions; there are problems of communication between the public sector and other stakeholders. The public sector has difficulties making known how it operates, what it wants, and what it is willing to contribute to various initiatives. For other stakeholders, such as the private sector or communities, there is a problem of

even knowing where to start to make contact with the "public sector". Even when the methods of communication are known, they can be extremely tiring and ineffective; this leads to agreements being reached without consultation with the public sector. There are cases where lower (local) levels within the public sector make "informal" agreements with their counterparts across the border without prior communication with the higher (national) levels of the public sector.

Incompatible policy and legislation

As identified in section 4.3, there is great variation in the policy and legislation between governments. This variation can hinder initiatives where one government allows for a certain type of activity while the other does not. The incompatible nature can be small (e.g. differences in whether open vehicles can be used by tourists in protected areas or not, or park closing and opening times) or can be larger (e.g. differences in customs and immigration policies, land use policy, or tenure).

No authority or mandate for lower levels to deal with "international" issues

This constraint is true for most governments in the region. The "on-the-ground" TBNRM process can be hindered where the authority, or mandate to act is not devolved from higher to lower levels of government. As mentioned above in communication, there are various examples in the region where cross border co-operation is taking place without the official consent of the national governments. The issue of lack of devolution of power is probably one of the most critical constraints to TBNRM. TBNRM is bi- or multi- national in nature and therefore, at some point, requires higher national level agreements. However, these agreements need to be reached on broad issues of willingness to co-operate, recognition of sovereignty etc.; they should then be handed over to lower levels of government to work out the details of implementation.

Concerns about Sovereignty and Autonomy

Lack of devolution by national governments is, in part, driven by a government's concern that it might lose some right or power over its own self-government by getting involved in TBNRM. This is more likely to become a constraint where there is a risk that the principles (see 5.1) are not upheld, especially those principles of democracy, e.g. tolerance and trust. If one partner feels the other is not abiding by the principles, then it will appear that the non-compliant country is trying to dictate or direct how the other country will act.

Trust, or the assured reliance on the character, strength and honesty of a particular party, is one of the most critical elements of TBNRM. Unfortunately the principle of trust is a difficult one as many of the stakeholders in the TBNRM arena either have not worked together before, or they have been in some situations, where they may have been in direct conflict with one another on other issues. With this said, the TBNRM process can assist to promote trust in the simplest way, by having stakeholders be trustworthy with one another. By building shared experiences of relying on one another, even if in very small tasks, it is easier for stakeholders to believe that they can rely on one another in the future.

High Transaction Costs

The costs of carrying out the TBNRM process are considered to be high both in terms of time and resources (human, financial and informational). Even before a partnership agreement is reached or joint implementation takes place (which have their own high costs), there is a need for several levels of meetings to address planning, document drafting, etc.. For a public sector that is short on resources, this can be viewed as an inordinately high amount of cost to deal with supposed intangibles before a concrete product is delivered. TBNRM also has the added transaction cost to properly address multiple land use issues and multiple stakeholders both within and across the border; this level of complexity is often shied away from by the public sector. An additional element to add to the high transaction costs is the fact that the political composition and focus of governments and government officials can change quickly (often with diametrically different views). These changes can impact the whole process and may sometimes necessitate starting again near the beginning.

Security issues, including disease transfer (veterinary issues) and border security

The safety and welfare of the nation is one of the most critical concerns of national governments. TBNRM, in its simplest sense, can be viewed by public decision makers as "unlocking the door" and letting in whatever elements (especially the undesirable ones) show up. Border security is one real fear in the TBNRM process, especially as in the past rebel activities in the region have been carried out from directly across the border. Hence, issues of trust arise and need to be addressed in regard to opening border areas. After border security, the threat of disease (mainly to livestock) and associated veterinary concerns are high on the list of factors hindering TBNRM (see veterinary issues, in section 3.1.5, for more on this topic). The erection of veterinary cordon fences, and the reluctance to remove them once they are in place, is in direct opposition to the idea of TBNRM as fences hinder the free movement of wildlife. In addition, there is concern about increased illegal immigration from the potential "softening" of boundaries. This is a large concern based on a history of migrant labourers moving to and from certain countries in the region.

Political instability

Unstable government has been and still is (mainly in the case of Angola) a problem in the region. In Angola the heart of the political resistance movement is based in the protected areas in the south-east corner of the country. This area happens to be part of one of the most critical potential TBNRM areas in the region with links to the Zambezi River system, the Caprivi Strip, and the Okavango Delta (incorporating Zambia, Botswana, Angola, and Namibia directly, and possibly other countries indirectly). This is a strong example of a government or partner that could be very difficult to work with in TBNRM. Other, less obvious issues of political stability can also hamper TBNRM activities. Politically weak or unsupported governments can also threaten TBNRM initiatives due to lack of ability to act, or by concerns of partner states in terms of commitment, trust and interdependence.

SADC

Lack of resources

SADC has inadequate resources (informational, human and organisational, infrastructure and financial) which limit the role that it could ideally play in the field of TBNRM. The major constraint with SADC is the lack of financial resources to address the host of other resource

problems. SADC itself does not have the budget to carry out all the activities that it has set out to do. The SADC structure delegates certain technical co-ordination roles to specific member states, in the case of TBNRM the most relevant being Malawi, for Wildlife, Fisheries, Forestry and Biodiversity, and Lesotho for Environment and Land Management Services (including water resource management). The ability of these technical co-ordination units (TCUs) is directly correlated to the capacities of the countries responsible for them. In the example of Malawi, which is severely limited by insufficient resources for its own national concerns, it is unlikely that sufficient resources are allocated to the SADC TCUs. In fact, even the few resources that are allocated to SADC are often re-appropriated for use on "more urgent" national issues. If SADC is really to play an active role, then a separate resource provision mechanism has to be designed.

Lack or poor use of co-ordinating structures

In theory, SADC is responsible for the co-ordination of regional activities. However, the structures, or elements that would make such a system happen are not there, or are poorly used. The SADC TCUs are often forced to a respond to crisis situations of concern, and are unable to address the day to day co-ordination role that TBNRM requires.

Multiple sectors in SADC

TBNRM is multi-sectoral and SADC, like individual national governments, has extreme difficulty working with multi-sectoral issues. Case in point is the inability of proper co-ordination of the Wildlife, Fisheries and Forestry TCUs, all of which are based in the same country (Malawi). The problem increases in magnitude when tourism issues (covered by Mauritius) or water resource issues (Lesotho) need to be integrated; further escalation occurs with additional issues on customs, immigration, and finance. Mechanisms for inter-sectoral co-ordination have not yet been sufficiently addressed in SADC. One recommendation is that a SADC TBNRM Protocol be established; this could provide the mandate for co-ordination (although it already exists in the SADC Treaty) and could outline some specific mechanisms for how co-ordination would take place.

Communication with role players at all levels is ineffective

SADC, even more that national governments (see above), has difficulties communicating with TBNRM stakeholders. This difficulty is partly technical in nature and partly due to inadequate resources (see above).

4.2 Private sector constraints and opportunities for TBNRM

4.2.1 Private Sector Opportunities

A politically correct industry

The nature-based tourism industry has a potentially good image that could be further enhanced by TBNRM. Growth in nature-based tourism can provide potential benefits such as increases in: economic development, conservation efforts, benefits for local

communities, and regional peace.

Overseas interest in investing in/donating to conservation enterprises

Many people in affluent countries are willing to spend money on ecological conservation in Africa. This existence value is reflected by the large memberships of international conservation NGOs and by the huge popularity of wildlife-related documentaries. Thus, given the right investment opportunities, much foreign private money may be available for TBNRM related activity.

Enabling mechanisms for investment such as SDI's, IDC fund

Government initiatives such as South Africa's Spatial Development Initiatives and the Industrial Development Corporation's ecotourism fund provide incentives for private sector developers to create infrastructure in TBCAs.

Generic regional marketing through RETOSA

The SADC Tourism Co-ordinating Unit has established the Regional Tourism Organisation of Southern Africa to market the region as a whole (co-ordinated destination marketing). Such marketing efforts should increase the total number of visitors to the region. Increased tourism will benefit private tour operators, especially those who operate on a regional basis.

Potential freer movement of people, goods, services and money

Whether or not freer trade is linked directly to TBNRM, the private sector perceives considerable benefits from TBNRM. These benefits include: reduced transaction costs, economies of scale, and the reduction of business risk through diversification.

4.2.2 Private Sector Constraints

Restrictive financial institutional environment

Within the region, there are numerous restrictions on capital flows, financial regulations, and tax laws that complicate international investment and financing initiatives. Foreign exchange risk also discourages investment by offshore agents. Governments in southern Africa could facilitate additional investment into TBNRM activity by removing foreign exchange controls (in certain countries), and by providing more secure systems to protect investors,

Government reluctance to embrace full private sector participation

To varying degrees, southern African governments actively discourage the private sector from assuming certain roles. Perhaps the most sensitive issue is that of private land ownership, especially large tracts land set aside for conservation. For example, many governments are unwilling to allow foreign organisations to purchase freehold rights to land

appropriate for conservation; they see this as an issue of national sovereignty. Some governments do allow private freehold land ownership (South Africa, Namibia, Zimbabwe and Botswana), but even so, tenure is not always secure. In most instances, leasehold options are preferred; however, these are often short-term and do not always provide the right incentives for appropriate private sector involvement.

Local communities not sufficiently empowered

This is a common private sector complaint. Commercial agents such as property developers and tourism operators are keen to negotiate directly with local communities over issues such as concessions, business opportunities through outsourcing, and employment. Naturally, most agents will attempt to achieve the best deals possible; however, many agents are genuinely concerned that communities are not disenfranchised or cheated in the process.

Commercial agents favour capacity-building initiatives that elevate the negotiating status and abilities of local communities. While agents do not see this as their role, they are critical of some of the past government and NGO involvement in this area. For example, they would like to see governments empower communities by granting them direct and secure land tenure (i.e. ownership rights). In many cases, governments are not willing to do this; in some instances they devolve authority to regional government structures. This partial devolution does not represent the true interests of the community. Although some commercial agents are happy to deal chiefly with high-ranking government officials (including paying bribes), it appears that most would prefer not to operate that way.

Commercial agents also are critical of many foreign NGOs that involve themselves with community issues in specific areas. Agents often feel that they can negotiate directly with communities, but are unable to do so when NGOs insist on representing the communities' interests. Such involvement may be well intended but sometimes appears to be self-serving, and is not always insightful or constructive.

Lack of capacity in public sector

Another common private sector complaint refers to the lack of capacity in public agencies, especially the conservation agencies, many of which are seriously under-funded in several SADC countries. The private sector has limited incentives to invest. In protected areas that lack infrastructure and vital services such as road maintenance and anti-poaching measures.

Lack of trust

Government agencies and NGOs are frequently suspicious of the motivation driving private sector agents. This suspicion is partly justified as some private agents have acted unethically in the past. The is a need for more effective communication between the parties involved to facilitate better understanding and build trust. Failing this, it will be difficult to implement successful partnerships.,

Existing barriers to travel and trade (customs and immigration)

Customs and immigration formalities at borders impose costs on private operators. In some cases, these can be significant. For example, the Kazangulu border post between Botswana

(Kasane) and Zimbabwe (Victoria Falls) often holds up tour buses for periods of three hours, presenting a significant cost (in time) for tour operators.

High airfares

The SADC region is still subject to many monopolistic practices in the aviation sector. Most national commercial airlines enjoy some protection from competition. Consequently, airfares from overseas and within the region are unnecessarily high. High tariffs act as a deterrent to foreign visitors, and discourage travel within the region. The exact extent of this deterrent effect is not known, but it may be significant and is worthy of further investigation in relation to other nature-based tourism markets.

Protectionism

Whereas most commercial operators favour greater access to other countries, some still favour protective measures. This is to be expected as many commercial operators want a competitive environment for everyone but themselves. There is a trade-off in granting operators greater access to other countries; on the one hand this may improve efficiency, on the other, it may result in lowering of standards and may adversely affect local businesses and jobs.

Veterinary controls

These act as a constraint in cases where the private sector may wish to introduce new stock of species that are disease prone (e.g. buffalo), or wish to allow species to migrate freely across boundaries that are separated by disease-control fences.

4.3 Community level opportunities and constraints for TBNRM

4.3.1 Summary of opportunities for community participation in TBCAs/ TBNRM

Improved social security and welfare

TBCAs could act to improve social security and welfare through more valuable community-based property rights if the following assumptions are met:

- Community property rights, generally, and specifically for TBCA situated communities, become more secure over time.
- That the value of natural resources in TBCA settings becomes more valuable through scarcity value, or by improved marketing.

Increased income generating options

Livelihoods could be improved through diversified land use and increased income generating options related to tourist industry. This process depends on TBCAs adding value to existing protected areas, by scaling up of CBNRM projects, and by opening safe routes

across peaceful boundaries.

Improved ecosystem and natural resource management

CBNRM has already established a foundation for enhanced compatibility of land use between land use categories. TBCAs could further extend this compatibility by adding a significant dimension by joining together areas where boundaries have divided ecosystems and key ecosystem functions (e.g. rivers and mountain ranges).

Richer cultural and social environments

Many of the region's ethnic communities have been divided by international boundaries. A TBCA program could foster a cultural renaissance if communication and exchange on following aspects could be facilitated:

- Historical heritage
- Indigenous knowledge systems
- Transboundary cultural exchange and festivals related to music, dance, arts and crafts.

A richer cultural environment could add value to nature-based tourism, as well as provide more employment potential. Culture provides meaning and identity as well as social organisation to local communities. Culturally based activities (music, song, dance, crafts) can also be marketed to the tourism industry.

Improved relations with government

A TBCA approach could **foster closer co-operation between governments and the communities** that live on the margins of national territory. This would benefit both parties. Working with authorities and communities in other countries would tend to foster community and state authority relations.

Improved collaboration with the private sector

A TBCA approach could improve collaboration between the private sector and communities as both sides have something to offer to the other.

CBNRM has already established a foundation for TBCAs and TBNRM

At one level TBNRM is merely an extension, or new dimension of CBNRM. Communities have a "head start" in the process as many have already begun to address resource property issues as well as institutional development and capacity building.

Status of local communities raised

TBCAs may raise the status of local communities and may help to provide a better forum to voice their concerns. By attracting the attention of urban and international constituencies, more attention will be focused to see whether communities benefit from the TBCA model in relation to conservation-based community development.

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Opportunity for communities learning

Communities can learn rapidly through the sharing of experiences and policies. The TBCA and TBNRM process provides a context through which all community stakeholders can compare and contrast their practices; this process creates a learning environment to encourage best practices. For example, a community with weak tenure rights could learn how best to advocate to improve its position from a community with more secure land tenure.

4.3.2 Summary of constraints to community participation in TBNRM

Weak Communal property rights (tenure)

Weak communal property rights (tenure) over wildlife and natural resources require high transaction costs related to achieving efficient and effective CBNRM.

Dualistic local authorities

Dualistic local authorities (statutory and traditional) contest community authority and undermine efficient and effective CBNRM.

Confusion between governance and tenure

Confusion between governance (the role of local authorities) and tenure (rights and responsibilities to natural resources) impedes progress in TBNRM activities. It is important for parties to agree on the duties, responsibilities and powers of the interested parties. Rights to land and natural resources should be vested in people and rather than the institutions that represent them.

Transaction costs of time

Community management of natural resources always involves collective decision making, which takes time.

Communities may be marginalised

Large nationally promoted programs may marginalize community participation in planning and implementation. Authorities, experts and private sector interests, may dominate the TBCA process.

NGOs may usurp community mandate

NGOs may usurp community mandates in order to fundraise for TBCAs. These efforts may not be sufficiently transparent or accountable in the use of, or the level of communities

access to, funds

Fears of a top down process with TBNRM

As TBCAs involve national diplomacy between protected area authorities and other sectors, implementation may be a top-down process. This may lead to reversing some of the gains made in decentralisation through the CBNRM program.

- While communities are securing some control over the CBNRM process they may lose some of that in a TBCA context.
- Donors and governments may allow the TBCA process to become fixed into a rigid project framework.
- Communities, unlike other stakeholders, may be marginalised and excluded from fora at national and local levels.

Insufficient capacity to participate

Communities will require institutional strengthening and capacity building to participate effectively in TBNRM. In addition, communities require access to information and assistance to manage new ideas and materials.

Cultural heritage subordinated

Cultural and biological diversity are of equal importance to communities but not to all TBCA promoters. Hence, cultural heritage aspects may be subordinate to the conservation and trade aspects of TBCA conception.

Equity relationships not clear

The equity relationship between state protected lands and community-based NRM is not clear within and between countries in regard to TBCAs. In several instances, communities that border protected areas may reside in the neighbouring country. Few, if any, protected areas address the equity needs of transboundary neighbours. For example, would private landholders in one country (Tuli Block, Botswana) address equity needs in a neighbouring country (Beitbridge, Zimbabwe)? If transboundary equity is not addressed, how would compatible transboundary land use be achieved?

5. TBNRM principles and recommendations

By assessing both the global lessons learned in TBCAs and the situation in the SADC region, a common set of justifications or rationales for the development and management of TBCAs were identified (see discussion in section 2). The advantages and benefits of TBNRM are there for all stakeholders, IF they are genuinely involved in the TBNRM process. The main rationales for TBNRM are as follows:

Ecologically - TBNRM re-establishes key ecological functions, improves the protection of internationally shared resources (such as watersheds and river basins), increases the area available for wildlife and plant populations (thereby reducing the extinction risk due to stochastic events) and re-establishes seasonal migration routes. All of which are disrupted by the artificial limitations imposed by political borders.

Politically - TBNRM improves regional ecological management (see above), increases economic opportunities, decreases cultural isolation, fosters peace and provides a basis for further collaboration in other, more politically charged, areas.

Culturally - TBNRM assists the economic livelihood of communities, resumes or legalises cross border movements and supports cultural ties and traditions, all of which have been divided or restricted by international borders.

Economically, TBNRM increases efficiency in monitoring and managing natural resources, eliminates or reduces duplication and creates an economy of scale, and enhances economic opportunities (e.g. increased tourism potential and revenues).

Organisationally, the TBNRM process increases capacity among stakeholders and enables better decision making about common problems and opportunities/potentials.

An assessment of the SADC regional situation with respect to TBNRM (see section 3) led to a discourse with stakeholders on the constraints and opportunities of developing and managing TBNRMA (see section 4). The needs for an understanding and application of certain essential principles for the TBNRM process were highlighted early in the assessment. In addition to these principles, there was also an emphatic request for better understanding of how the TBNRM process should be supported (both internally and externally). Based on the situational assessment, and on a recognition of the principles and nature of the process, a small mixed group of 20 stakeholders and specialists met to assess process needs. In addition, activities were identified to reduce constraints and optimise opportunities. Those needs, activities, principles and process recommendations were then reassessed and presented to a larger, more representative, group of 50 stakeholders. This group took the analysis of issues one step further. The following section is a compilation of the assessment of the regional situation and of the discourse with stakeholders in the region, the results of which are:

- principles of the TBNRM process (5.1) and
- an assessment of needs and proposal of activities requiring assistance (5.2).

5.1 Principles of the TBNRM process

TBNRM activities are already underway in many parts of Southern Africa. Some areas have been involved in TBNRM for decades, while others are just beginning. Stakeholders in the region have pretty clear ideas of how they would like the TBNRM process to proceed, both at the localised TBNRMA level, and in terms of overall support to TBNRM in the region. Stakeholders have identified certain principles that can provide the self-determined rules, or codes of conduct, of how operation in TBNRM field should proceed. Using these principles may enhance the success and endurance of the TBNRM process in the region. One main rationale supporting TBNRM is the need for, and value of, taking a broader **Ecosystem approach** to NRM.

The following section describes some of the key principles (**in bold**) identified for TBNRM. All of these principles address one or more of the following three overarching principles:

DEMOCRACY – Stakeholder involvement should occur at all stages of the TBNRM process. Decisions need to be participatory rather than arbitrary. TBNRM initiatives are for the "people" - the users and managers of the resources.

SUSTAINABILITY – Applies to finding ways to have enduring resources to carry out TBNRM initiatives. Sustainable resources should include: natural, financial, human and institutional resources as well as the ability to implement best use practices.

EFFICIENCY - assures that the desired effect is produced without waste.

5.1.1 PARTNERSHIPS

TBNRM is essentially the co-operative or collaborative management of resources by a group of stakeholders who enter into various forms of **Partnerships** with each other. A critical element of TBNRM is the promotion of these partnerships. Stakeholders need to feel that they can rely on one another; without **Trust**, stakeholders will not believe in, or be committed to the process. The TBNRM process will need to promote trust by building shared experiences where partners can successfully rely upon one another. Where past histories interfere, these experiences can start with small tasks and build into more complex relationships over time, as higher levels of trust develop.

One stumbling block occurs when decisions are made that certain stakeholders are unaware of, and did not participate in making. Hence, **Transparency** is important so that the process is clear to everyone. Finally, stakeholders have to feel that there is **Accountability** in the process, that people are answerable the stakeholders and are responsible for their actions. Accountability is especially important for, though not limited to, "authorities".

Another element of TBNRM is **Tolerance**. As discussed in the previous section (Sec. 4), situations in the region can differ significantly in terms of capacity, socio-economics, legal issues and policy. Individuals, groups, and institutions have different practices and different value systems. Stakeholders need to be aware and tolerant of these differences. There needs to be mutual **Respect**. At the local level, this means recognition and respect of Indigenous Knowledge Systems, cultural heritage and kinship ties. Since these differences can occur across national borders, as well as internally within countries, it is essential to recognise the **Sovereignty** of individuals, institutions and, particularly, nations. Each

partner needs to feel that they have the power, authority, and control over their situation. Sovereignty is particularly important for the nation states that desire to maintain their autonomy, or right of power of self-government. A potential constraint to TBNRM occurs when a nation feels that its neighbour is trying to exercise control in its area of influence. These fears may be more likely between parties where past histories of hidden or open conflict have weakened trust between the nation states.

For the partnerships to work and be sustainable, they need to be based on mutual or shared interest in the partnership. **Reciprocity** in the partnership is important, not just on the levels of interest, but also in terms of actions taken and "carrying the weight". One partner can not feel like they are the only (or main) party contributing to the initiative. In addition, **Equity** is important in relationships; parties that deal with the majority of the costs in the process should benefit from the process, directly and/or indirectly. Without equity, socio-political factors will threaten the sustainability of the TBNRM initiative. There can be no one-way streets in TBNRM. At the same time, initiatives can not be seen to be dominated by one actor.

SYNERGISM

Synergism is the anchor of TBNRM. There is no sense in pursuing TBNRM unless there is a feeling that the whole is greater than the sum of its parts. TBNRM needs to lead to efficiency and increased benefits. Otherwise the additional opportunity costs of TBNRM will lead stakeholders to stay isolated and to manage initiatives within their own boundaries. TBNRM needs to be a **Value-added** product. The sustainability of the process requires that a TBNRMA's existence increases the relative worth, or importance of its parts. Similarly, the costs (time/money) of the process must be less than the perceived benefits. For the process to be viable, all key partners need to see the existence of a **real potential for incremental benefits.** One strong argument to come out in the region is that low transaction costs should be pursued. TBNRM initiatives should strive for the **maximum output for the minimum inputs.** Consultations with stakeholders have shown that this is not only what is realistic considering limited resources, but also what is most effective. Comparatively, the Southern African Region has many on-going and potential TBNRM initiatives that require minimal inputs to lead to fairly significant outputs. In many ways, the adage of "small is beautiful" can apply to the nature of inputs required for TBNRM.

DEMAND DRIVEN

TBNRM initiatives must be based on the urgent, pressing, needs, or on requirements felt by "managers". These managers can come from the community, private sector, public sector or others, or some combination of these stakeholders. Stakeholders must have an **interest** or desire to be involved in the TBNRM for any or all of the ecological, social and/or economic rationale.

One of the strengths of TBNRM in Southern Africa is that there are already initiatives and actions underway. Any agency or individual that wishes to further assist these efforts, or to assist new initiatives, does not need to be the driver of the process. The TBNRM process needs to be **responsive to initiatives shown** and to react rapidly to what has already been started. **Rapid response** is important so that initiatives, once started, do not stagnate once they reach critical levels for action. Assistance needs to be **client based**, where actions are responsive to the requests of those using, receiving, demanding or purchasing the services,

assistance or "product" provided. By limiting externally driven processes, true stakeholders maintain **Ownership** and control of the TBNRM initiative.

To increase efficiency, efforts should, where possible, **use existing resources and institutions**. Since the region already has various elements of the TBNRM process underway, it makes sense to capitalise on the experience and resources of the regional stakeholders. For example, as legal agreements have been made in the Kalahari-Gemsbok & Gemsbok NP's, the lessons learned from establishing the agreement between the nation states should be drawn on by others in the region. Finally, it is also important that the TBNRM site specific existing institutions are used before attempting to create new structures.

DEVOLUTION and PARTICIPATION

The overriding principle of **devolution** is necessary for all the above to take place. If partnerships are formed, synergy's maximised, and demand driven processes supported, then it is essential that responsibility and decision-making are devolved to the appropriate level. Higher levels of authority must enable lower levels of responsibility and benefit. Although "decentralisation" and "democratisation" are often promoted in the region, real devolution is still not sufficiently evident. Lack of devolution could be a stumbling block for TBNRM. The ability of stakeholders to form partnerships in which they can genuinely work and share responsibility is a critical assumption of TBNRM. Although it is difficult, a **balance** must be achieved between high level political support, which is required at the one level, and local ownership and self-determination that are necessary at the local level.

A principle related to devolution is that of **participation**. All bonafide stakeholders need to be identified and actively involved in the process to contribute to its success and to share in its benefits. Participation of all stakeholders is imperative. In order to gain equitable participation, it may be necessary to slow the process while the capacity of some parties is developed. In general, **inclusion** as opposed to exclusion should be promoted.

PROCESS-BASED

Finally, TBNRM initiatives must be seen as a process. They need to have an approach which is marked by gradual changes that lead toward the development of improved levels of TBNRM. This process orientation requires time and patience, it cannot impose institutions or structures on people, but rather allows them to evolve (in their own time) on the basis of real need. This allows the initiative to be internalised as opposed to remaining external. **Adaptive management** that is flexible and that adjusts, accommodates, or conforms to new demands and conditions should be implemented. Transboundary management needs to learn from, and be driven by, its experiences (and those of others) and to adjust to changing realities.

Supporting a process-based approach means that general guidelines can be outlined for any given area based on regional or local experiences and knowledge. However, there must be **Recognition that situations differ and are unique**. Hence, "blue-prints" for TBNRM for any given area do not exist. TBNRM efforts should evolve according to specific situational and subjective circumstances, and should not be moulded by some general overall framework or paradigm. Priorities, resources, capacity and motivations differ and these need to be recognised and acted on accordingly for initiatives to be sustainable.

5.2 TBNRM recommendations of actions to be taken

Prior to identifying activities, stakeholders emphasised the need to agree on principles (see 5.1). Once these principles have been agreed upon, the foundation to support the TBNRM process is strengthened. As the foundation becomes increasingly solid, the actual TBNRM process (the dialogue processes, making of agreements, collaboration and forming of partnerships) can be supported.

The needs assessment and discussion with stakeholders identified five areas and related activities that are essential to develop the foundation to support the TBNRM process, these are:

- ***information*** required to make informed decisions available and used;
- ***skills*** required to strengthen the foundation and support the process developed;
- ***authority*** to make decisions, support and manage the process (and political will exists);
- ***an enabling policy and legal environment*** developed (and political will exists); and
- ***resources*** (information materials, human resources-people and organisations, basic infrastructure and financial resources) enhanced, available and used efficiently.

These five areas are separate yet related to one another. To obtain the information required it may be necessary to develop the skills and capacity to assemble baseline data and information (i.e. technical or financial analysis skills). One important aspect of information is simply knowing what type of skills are actually required. Having accurate, appropriate information will enable the necessary authority to make informed decisions and to develop the political will to back them up. Similarly, without the authority or the political will and backing, results will be difficult to achieve. By developing the enabling policy and legal environment, the way is paved for authority to exist (though it could be argued that authority is needed first). To assemble information, develop skills, address authority issues, and enhance the enabling environment, funding and trained capable people are required.

Through the activities, the recognition and acceptance of the principles is enhanced; the principles become part of the process. For example, an activity that works to remove perverse incentives or provides accurate information about land use options (i.e. validity or not of an agriculturally biased land use policy), will promote efficiency and sustainability. Similarly, by increasing resource access rights to the community level, authority and responsibility is devolved and the principle of democracy is supported. Of course, one could make the argument of which comes first - the activity, or the principle to drive and allow the activity to happen. For the most part, the principle needs to exist first. However, the activities serve to further support the principles and in that way, the two are mutually reinforcing.

For almost all activities, the statement "on both sides of the boundary" can be applied. For the TBNRM process to be effective, it is essential that it is not a one-sided endeavour. Both sides (or more if that be the case) need to assemble and have available the information to make informed decisions; develop the skills required to make support the process; have the authority to make decisions; have an enabling policy and legal environment; and have the resources available to strengthen the foundation and support the process. By ensuring that

all relevant sides are involved in the TBNRM initiative, several of the essential principles (i.e. reciprocity in partnerships, participation and mutual respect) identified above (see 5.1) are upheld. This will help to ensure the sustainability of the initiative.

5.2.1 Information required to make informed decisions available and used

As highlighted above, the availability of, the access to, and use of information is required on all sides of the TBNRM initiative. Data must be collected, surveys conducted, analysis performed, and, most importantly, the information used. The information should be appropriate both in the nature of its collection and in its presentation such that it is useable for stakeholders. It must abide by the principles, especially those of efficiency and sustainability. The collection and presentation of information also needs to be designed to be accessible and understandable to all stakeholders involved; this may require that different formats or styles are used. In addition, it must be adaptive; hence there needs to be more active, on-going collection and use of information (i.e. on-going case studies, trends and development and best cases). The gathering of information cannot be seen as a static, one time activity, but rather part of the feedback cycle that assists the TBNRM process adapt, and hence, endure.

- ***skills determined***, which ones are needed to develop and manage TBNRM process (see 5.2.2);

- ***stakeholders defined and identified***, who are they and what is their interest in the process. Define which motivations are driving the stakeholders in the TBNRM process: ecological, economic, conflict resolution, or something else or any combination of all of the various rationales;

- ***ecological/natural resource situation understood*** identify the ecological processes and elements that are affected in the trans-border area;

- ***social and socio-economic situation understood***, including Indigenous Knowledge Systems (IKS) - which incorporates local social constructs of meaning and purpose in relation to the environment and cultural and kinship ties. This information can be acquired through a variety of participatory analysis methods and should include participation of traditional leaders (can provide governance support to the process and their participation is vital), healers (can share and compare their knowledge and their market opportunities), spirit mediums (can provide awareness of traditional providence in the context of past, present and future generations) and persons with special knowledge of culture, environment and history. User groups knowledge and practice can be shared and compared. Mutual aid relationships can be identified and encouraged. Local history can be documented and shared. Culture can be nurtured for internal purposes as well as contrived for sale in the tourist market.

- ***policy and legal environment clarified***;

- ***business and economic opportunities and liabilities assessed***, which can include case studies that demonstrate economic performance of existing enterprise; general viability studies to identify opportunities; specific feasibility studies to identify opportunities. In making these assessments it is important to make the distinction

between commercial success (refers to an actual tangible profit) and economic success (which might incorporate other non-direct values and benefits). Both are important but they are different.

- ***value added of "going" transboundary quantified***, determine the relative value of the biological, economic, community-based socio-political issues. Knowing these values will assist in convincing a wide-variety of stakeholders that the TBNRM initiative is worthwhile, both in general and specifically for a given TBCA.

- ***management practices, both existing and potential, identified and determined***;

- ***options available identified, and the pros and cons of these assessed and results communicated***; For example, identify how communities would benefit from raised regional development of the tourist industry, and how it might affect them;.

- ***potential or existing conflicts/constraints identified***;

- ***TBNRM process itself clarified;*** develop lessons learned, guidelines (not blue-prints) or checklists of best practices for TBNRM;

- ***plans developed***, (i.e. land use plans - LUP) Strategic and project plans need to be developed, including logical planning processes involving objectives and activities. Communities need this, both to compare with non-community stakeholders, and for their own benefit.;

- ***ecosystem approach to NRM in TBCAs developed***, to add scale to the planning process, it is necessary to examine the regional and bioregional land use planning. This activity (identified by stakeholders as one of the highest priority issues) is part of providing information to affect the enabling environment (5.2.4). This also helps to assess the validity of agriculture as a dominant land use and determine its appropriateness as a land-use in certain areas. The answers are useful for stakeholders, from resource users to policy makers, to make informed decisions. Some stakeholders went as far as to say that the entire decision-making process needs to be housed within the larger context of an ecosystem approach.

- ***monitoring and evaluation developed, conducted and used***, for the TBNRM process and for many of the individual elements (i.e. NRM and economic). This M&E serves as a feedback of information on various elements of the process. In addition, the M&E can serve to check to see if the principles identified in 5.1 are being upheld. The level of the M&E needs to be determined; what kind, for whom, by whom and in what form.

5.2.2 Skills required to strengthen the foundation and support the process developed

There is a critical need to develop the capacity of stakeholders involved in the TBNRM process. This capacity is necessary both for the tasks required in the foundation building stages of the TBNRM process (described throughout section 5.2) and in the process itself (5.3). In keeping with the principles identified in 5.1, especially balance, reciprocity in partnerships and equity, there is a need to "level the playing field". For partnerships to work, one side can not seem overwhelmingly in control of the relationship, otherwise the

partnership is not healthy or sustainable. Hence, skills development should focus where relative capacities are unequal. The demand for this activity was stated by all parties, both those with greater and those with lesser capacity levels. Those in a stronger position are keen to see their potential or existing partners capacity improved so that equitable partnerships can be developed .

The specific techniques of how these skills are developed can vary, and include things such as training, mentoring/coaching, and exchange visits. Again, it is important to keep in mind the principles when developing and providing capacity building services, both in terms of who is selected to provide the service, who is the recipient and what skills are developed. Where possible, training should take place as well as training of trainers. Where appropriate, joint training should occur so that partners build familiarity, relationships and trust. The training and skills development must also be appropriate and tailored to the needs of those participants. Where possible, existing training facilities and personnel in the region should be used (and more specifically in the locality of the individual TBNRM initiative).

Stakeholders also emphasised that working examples should be used, i.e. exchange visits and/or mentoring by fellow regional stakeholders, as much as possible for skills development and communication. In addition, TBNRM should add to the learning process initiated through CBNRM and should build on the CBNRM lessons learned, especially in regards to skills development and information acquisition. The following types of skills need to be developed:

- ***organisational skills developed***, the ability to form into a complete functioning whole is critical to the TBNRM process. This applies for organisational abilities both within individual stakeholders groups and between various stakeholders. Skills in systematic planning and united implementation are needed.

- ***communication skills developed***, the way in which information or opinions are exchanged or transferred;

- ***facilitation skills enhanced and developed***, this needs to occur at different levels (local community facilitation; national facilitation between community/commercial/govt. sectors; regional across boundaries /technical & political). Facilitation was identified as an important/high priority for TBNRM to be a "bottom-up" process and to uphold the principles set out.

- ***group dynamic skills developed***, this goes beyond facilitation into understanding how groups function, and to identify your individual role in that group. All stakeholders need to learn how to deal with one another, to understand what each other wants, and what it means to be a good partner (similar to how clients need to learn how to be good clients and service providers)

- ***negotiation skills developed for all stakeholders***;

- ***analytical skills developed***, i.e. knowing how to make decisions;

- ***business skills developed***, including planning, assessment, finance, marketing and management;

- ***technical NRM skills developed***, including management use, land use planning, and ecology. For example, communities need hands-on resource management

training to address specific situations (e.g. problem animal management, anti-poaching, capture, translocation, stock and range management, and camp development and maintenance and others).

- ***networking skills developed***;
- ***fundraising and proposal writing skills developed***;
- ***skills "gap analysis" conducted***, to see whether, and what additional skills need to be developed at various levels.

5.2.3 Authority to make decisions and manage and support the process exists

TBNRM is about partnerships and collaboration. Stakeholders are unable to enter into these partnerships if they do not have the authority to do so. Once the right or power to influence thought or behaviour exists for stakeholders, then they can make binding decisions and fully manage and support the process. The existence of authority is therefore a fundamental requirement. This authority is especially important in the transboundary context, when stakeholders are talking with, negotiating with and striving to make agreements with their cross-border partners. By ensuring that the appropriate authority exists, the ability to make decisions, and regulate and manage the process is increased.

The existence of this authority is closely tied to developing the enabling policy and legal environment that permits and supports the authority. The policy and legal environment also control the devolution of authority. Authority is separated here to emphasise its importance.

- ***devolution promoted and supported***, rights and responsibilities need to be passed from higher levels to the lower levels where actions need to be taken, costs are incurred, and benefits acquired. Mechanisms to assist and ensure that this devolution takes place need to be established and supported;
- ***framework developed to guide centralised representation on decentralised issues***, this task has a critical tie with devolution in the context of TBNRM. To move the TBNRM process forward, it needs to be decentralised to the specific areas, on both sides of the border, in which the transboundary agreements are made. However, this should occur in such a way that the national (centralised) authorities (in recognition of the principle of sovereignty and autonomy) do not feel completely excluded from the TBNRM initiative. This activity highlights the potentially artificial distinction between "top-down" and "bottom-up". TBNRM stakeholders see a dynamic dialectic between high political SADC regional and bi-national on one level, and local stakeholders on the other level. Somehow, TBNRM needs to find a middle ground that can incorporate all parties at the appropriate times and in the appropriate fashion.
- ***resource access (property) rights secured,*** for local communities, the private sector and for government institutions/bodies (as and when appropriate). Devolution of land and resource access rights must be fully supported to ensure that tenure, as a critical component of establishing a positive incentive framework, is secure and unencumbered by unnecessary negative sanctions and bureaucratic hurdles that merely raise transaction costs. Differentiation between "ownership"

(supply) of environmental goods and services and utilisation (demand) for communally based natural resources needs to be encouraged. Institutional support to proprietorial and utilisation groups, and the relationship between them, needs to be enhanced. Similarly there should be support to gender-based resource user groups.

- ***political will enhanced***, to support the TBNRM process.

5.2.4 An enabling policy and legal environment developed (and political will exists)

One of the most critical elements identified for TBNRM to have is an "environment" that is supportive and enables stakeholders to make meaningful, lasting and sustainable partnerships. The enabling environment, a complex mix of factors, is the foundation upon which TBNRM initiatives are built. As 5.2.3 mentioned, the enabling environment is tightly linked with developing the necessary authority to act. The following are some of the critical activities that will help to put this enabling environment in place.

- ***development of regional protocols supported***, which assist in the forming of partnerships, such as bi-lateral agreements. As highlighted, the SADC Wildlife Protocol makes specific reference to TBNRM, in addition there has been some discussion at SADC fora to develop a specific multi-sectoral protocol for TBNRM (which covers a variety of cross border issues, trade, NRM, etc.). Other regional protocols to be developed would include: tourism, customs and immigration, and veterinary controls. In part, the establishment of these protocols will require several meetings that should be supported.

- ***legislative and policy review & harmonising of legislation and policy supported***, is critical since there is a need for a legal basis for the TBNRM process and its various elements.

- ***regional TBNRM strategies and vision developed***

- ***lobbying and advocacy for TBNRM supported***. Who, how and when is this appropriate needs to be determined. There is a need to market the idea of TBNRM to government decision-makers to ensure high-level political support. In addition, parties who might create barriers need to be identified and engaged.

- ***the most appropriate land use needs to be assessed and supported***. In particular, agriculture as dominant land use needs to be assessed to determine if this is the most appropriate land use. Considering the ecological/natural resource situation in the SADC region (see 5.1), the pursuit of this seemingly unsustainable practice of allowing agriculture to be the dominant land use needs to be questioned. What is driving this, and are there some perverse incentives that need to be altered /

- ***perverse incentives reduced or eliminated***, that has links to both efficiency and sustainability principles. For example, subsidised costs for livestock management, irrigation and dry-land cropping (see above) may lead to unsustainability. Also, assist communities to appreciate the capital value of their resource stock, and to understand the benefits that can flow from improved resource management.

- ***ecosystem approaches promoted***, along with the need for regional land use planning and bioregional planning.

- ***customs and immigration formalities improved***, to aid the TBNRM process and allow for value-added to be realised.

- ***defence and security issues addressed***, including anti-poaching and human border movements. If these concerns are not resolved, then it is unlikely that governments will support TBNRM initiatives.

- ***veterinary control issues addressed and resolved***. Some of the prime TBNRM initiatives will be thwarted if these veterinary issues are not resolved. Moreover, the value-added of joining contiguous land areas and expanding habitats will be meaningless if fences or animal diseases restrict the anticipated renewed wildlife migrations.

5.2.5 Resources enhanced, available and used efficiently

Various resources are required to support the TBNRM process, these are: information, people and their organisations (human resources), basic infrastructure and finances. The availability of, and access to these resources for all stakeholders is critical to facilitate the TBNRM process. It is necessary to know how and what kind of support can be provided (and what cannot). Stakeholders also need to be able to identify what resources they need. For this activity area it is especially important to remember the principles set out earlier, and to develop mechanisms to ensure equitable relationships in the provision of resources between the public, private and community levels.

Information materials:

- ***Reference of materials available established*** There should be an information management strategy (not a depository), which serves all the three levels. Housing and ownership of the information materials needs to be determined, e.g. where would copies of community level agreements be available?

- ***Forum for exchanging views established***

Human resources - people and organisations:

- ***Core TBNRM working group and discussion forum developed and supported.*** This working group is considered to be a higher priority than the directory of expertise, because it is more accountable.

- ***Core TBNRM resource persons developed and supported***. There is a need for specific individuals in organisations and stakeholder groups to act as catalysts to run and mobilise the process, these individuals should be both internal and external to the process.

- ***Technical advice provided***, as and when needed and requested

- ***Directory of expertise developed***, including expertise in legal, facilitation, planning, and technical NRM issues. The directory could include people and organisations and links to examples of agreements and steps taken along the process by certain stakeholders. The expertise directory should include "real skills" at different levels and not have a "Ph.D. syndrome" of "experts". This directory is supposed to be a resource of people (mainly) available in the region who can assist the process in some way or another, (i.e. they can be knowledgeable community members or people from the private sector or university professors).

- ***TBNRM network and communication methods established***, in part, so that experiences and lessons learned can be transferred readily. Need to determine: roles and responsibilities among existing players; if there is a secretariat, where it would be located, how it is to be funded; guidelines for establishing groups at all levels; E-mail/ web sites; how to get information to and from the local level; and how to address language issues.

- ***Neutral accessible TBNRM coordinator established.*** That would serve to link all role players. There is a need to define roles (i.e. fundraising, networking, organising and providing information). The coordinator could take a proactive exposure of problems, lessons learnt and solutions. Whether the coordinator, or anyone for that matter, would play this role or not, is unknown, but some stakeholders identified the need to have a watchdog agency to guide and support the process. Whether this is desired and what form or structure it would take needs to be assessed.

- ***Development of Community Based Organisations (CBOs) promoted and supported.*** These CBOs would advocate and represent community interests at all levels (local, national, regional). This includes: encouraging the formation of community-based producer associations; foster the formation of national associations for community-based producer groups including special interest groups (e.g. traditional leaders, healers, user group representatives); enabling national community representatives to meet other national leaders and to participate in regional for a (as a stakeholder group); and to ensure that important planning meetings do not take place without direct community representation.

- ***Capable government institutions created, in place and supported.***

Basic infrastructure:

- ***Requirements for infrastructure development identified.***

Financial resources:

- ***Bureaucratic impediments to the flow of funds investigated***, (whether investments or donations) and lobby to streamline or remove them (within government and lending organisations).

- ***Clearing house mechanism for incoming funds created.***

- ***Critical communication issues regarding the ability to access funds addressed.***

- ***Easy to use guides created on how to access donor funding*** (from multilaterals

and concessionary financing).

- ***Security for private sector investments provided***, through enabling legislation and especially through creation/recognition of strong private property rights.

- ***Collateral for communities created.*** Lobby governments to create secure land tenure for communities, i.e. title deeds (or long leases, which must be inalienable/irrevocable).

- ***Small grant facility for TBNRM established.*** The recipients should be stakeholders who are trying to carry out certain aspects of the TBNRM process and find that they are unable to (e.g. to hold meetings to reach agreements, to conduct an exchange visit, or the need to hire legal services when an agreement needs to be signed). The specific mechanisms of how the facility would operate and how it would be accountable needs to be developed (i.e. possibly would need an independent review and monitoring service).

- ***Innovative financing mechanisms for TBNRM developed***, i.e. investigate the potential for Debt for Nature Swaps and Trust structures. In particular, investigate the possible creation of "hybrid" financial instruments that can tap the demand for donations and commercial investments; i.e. create instruments that can deliver steady (but below-market) financial returns without creating a conflict of interest between donation components and commercial components.

5.2.6 TBNRM process supported

All of the result areas discussed in the previous sections (5.2.1-5) are basically about providing the foundation to make TBNRM possible (i.e. to get the appropriate people to the table to make accurate and informed decisions). This section specifically highlights some of the critical steps in supporting the TBNRM process itself, AFTER the foundation has been put in place.

One way of looking at the overall process is to actually list all the activities identified in the results areas in 5.2.1-5, along with the additional activities identified below in 5.2.6, to develop a checklist of what steps might be involved in a TBNRM process, from building the foundation to supporting the process itself. A checklist to determine if progress is being made towards having a functioning TBNRM process, might include:

- political will exists (at all levels)
- policy for partnership is in place / can be developed
- target markets for TBCAs exist (e.g. tourism, water)
- need to improve management and utilisation of shared resources exists
- bodies / organisations willing to cooperate and that they exist
- there are bodies/organisations of shared resources
- dialogue and communication can be facilitate and will be followed through, and
- need to improve management and utilisation of shared resources exists

The TBNRM process itself will be different for each specific TBNRMA and should reflect the specific ecological, economic and socio-political contexts. However, the following are general steps in any TBNRMA process:

- create a vision for the TBNRMA;

- initial consultations;
- set up compatible, permanent team to negotiate (all key stakeholders involved);
- team visits potential site;
- management and development plan prepared;
- obtain government/other approval; and
- written agreement and other enabling arrangements.

The style of the process should take into consideration the principles identified in 5.1, including:
being inclusive and transparent; decentralised as appropriate; broad representation of stakeholders; and having a forum to allow fuller participation.

Some specific activities that would support the process are:

- ***Dialogue between TBNRM stakeholders supported and promoted***, through regional, bi-lateral & local meetings (the scale to be determined by the issue at hand). In particular, support to boundary-based communities to establish communication with neighbouring communities in other countries. It is also important to identify and engage players who create barriers.

- ***Forming of partnerships promoted.*** Specifically, collaboration between NRM (incl. PA) Authorities and other stakeholders facilitated and strengthened.

- ***Common TBNRM vision developed and promoted*** (both area specific and region wide).

- ***Cross border management plans developed and promoted***, also develop regional strategies.

- ***Development of regional strategies for TBNRM supported***, also for tourism, trade, that integrate and take notice of TBNRM principles and needs.

- ***Bi-lateral agreements developed***, which can be between various groups of stakeholders communities and P.A. (also multi-laterally). As identified before, TBNRM is basically about partnerships and agreements and therefore these should be developed and supported.

- ***Bodies for co-operation (sectoral/international) created or enhance existing.***

5.2.7 Indicators for activities and identification of responsibility

Indicators need to be developed to show whether, and to what degree the activities listed above, and the process in general, are successful. The main indicator for the whole process is if TBNRM initiatives are functioning properly. The following are some samples of specific types of general indicators for the activities listed in 5.2.1-5.2.5:

Information

- Existence, availability and use of such materials
- Databases assembled
- Joint management plans developed

- Land-use and strategic plans developed
- The point is reached where there is no longer a need to collect data
- Properly informed decisions can be made

Skills

- Skills developed such that all stakeholders are able to participate in process and that participants are able to adequately represent their interests
- Ability to process information exists
- Informed decision making takes place
- Contracting and negotiating occur
- Records are kept, i.e. financial.
- Implementation of TBNRM initiatives happens

Authority

- Ability to make decisions exists
- Transborder agreements on joint management developed

Enabling Policy and Legal Environment

- Political will and support for TBNRM exists
- Regional protocols have been developed
- Legislation and policy review has been conducted and legislation and policy is harmonised
- Regional TBNRM strategy and vision exists
- Perverse incentives removed
- Ecosystem approach predominates

Resources

- Existence of utilisation of the resources made available, by all stakeholder
- TBNRM process is happening
- Broad stakeholder consultation and participation
- Decisions made on how to use resources
- Management plans implemented
- Records of process exist

Responsibility for activities:

In recognition of some of the principles identified above, is important to identify who will address each of these activities. It is also important to recognise that there are varying priorities of the most relevant activities at each of the three levels (local, national and regional). Similarly, decision-making processes are different at each of these levels and this must be kept in mind when developing activities to assist people in making informed decisions.

5.2.8 Short-term follow-up activities identified by Stakeholders in the Region

At the last consultative meeting with stakeholders from the region in December 1998, potential follow-up activities to the study process were identified. It was recognised that the study process itself had served as a vehicle to enhance the regional discourse on TBNRM, which was already on-going, and that the momentum that discourse has sparked should not be held back. The following list contains some specific follow-up activities; however, this does NOT indicate that the other activities identified earlier in this section are not important as well. The following list supplements those recommended activities already discussed in 5.2.1-5.2.6.

Follow-up activities to the TBNRM process: (not prioritised)

1. Distribute information on TBNRM widely, starting with reports from this study, to a wide group of stakeholders (as well as people who are unaware of or have not yet accepted the principle of TBNRM).
2. Donors should consider how they can best support the TBNRM process in the region, given their comparative advantages, and regional priorities; flexibility in funding provision will be an advantage since funding needs will change as TBNRM develops in the region.
3. Develop and update case study outlines for existing TBCA initiatives in the region, using a standard template; this will facilitate exchange of experiences and lessons learned, and is a way of updating knowledge of TBCA development in the region.
4. Arrange meetings for working groups of stakeholders from both sides of the border, based on specific TBCAs or TBNRM areas
5. Further examine and identify TBCA/TBNRM potential for each country (this could be done by national wildlife or forestry departments, environment ministries, and/or NGOs)
6. Link individual TBCA initiatives with others in the region in order to promote exchange of experiences, lessons learned and synergies (including exchange visits).
7. Continue with and build on the TBCA working group established under SASUSG, and determine an appropriate institutional home for it if it does not continue under SASUSG; develop links to SADC-NRM program (see below) and tie to SADC (see below).
8. Integrate SADC NRM with TBNRM.
9. Hold a ministerial level SADC meeting to advocate TBNRM and increase awareness, possibly laying the groundwork for a specific SADC TBNRM Protocol.
10. Integrate other SADC sectors (besides Wildlife) more into the TBNRM discourse, i.e. Fisheries, Forestry, ELMS (water), Tourism, Customs and Immigration and others, especially SADC Technical Co-ordination Units.
11. Establish a resource centre, housing information materials, contact lists etc. Location of this centre still has to be determined (but it should be in keeping with the principles in 5.1, i.e. neutrality is important). Possible locations include: Southern African Regional Documentation Centre (SARDC); PPF; an NGO such as WWF or IUCN; and SADC NRMP.
12. Establish a clearing house for expertise on TBNRM, covering: experts, their skills and experience, and their availability (supply); and type of assistance sought (demand).
13. Establish mechanisms for those active in TBNRM to ask questions, seek advice, communicate and interact with one another, and to integrate practitioners i.e. forum/network, partly through creation of a website and listserve.
14. Determine how to get communities more actively involved in the TBNRM discourse.

15. Incorporate Congo and Angola into the TBNRM initiative as far as possible, depending on the political situations in the two countries.
16. Involve the United Nations Centre for Regional Development (UNCRD), making contact and informing them of what is happening, and see what collaboration can take place.
17. Get TBNRM on the agenda of various upcoming international conferences (some of which may be held in the region)
    - World Parks conference
    - CBD and Global Biodiversity Forum (GBF) 2000
    - Desertification November 1999
    - NRM Biennial meeting (see 17)
    - World Conservation Congress (WCC)
    - Pan-African Sustainable Use Symposium
18. Promote exchanges with practitioners in the rest of Africa so that Southern Africa can benefit from experiences elsewhere on the continent (and vice versa).

5.3 Summary

A wide range of activities has been recommended to assist development of the TBNRM process in Southern Africa. Regional requirements include improved information availability in order to support informed decision-making. Where appropriate, the authority to make decisions and manage and support the TBNRM process needs to be devolved to the most appropriate stakeholders and resource access rights secured. The enabling environment for TBNRM development needs to be enhanced in many ways including: development and harmonisation of appropriate regional protocols, national policies and legislation; promotion of ecosystem approaches and the most appropriate forms of land use; reduction or elimination of perverse incentives; and support to advocacy for TBNRM. Finally, there is a strong need to develop and strengthen the human, organisational, infrastructure, financial, and material resources to move the process forward.

Recommendations include both broad, long-term support in general fields, and some very specific activities that could be undertaken with relatively small amounts of funding in the short term. It is important that support is prioritised and carefully planned in such a way as to overcome all the major constraints in particular circumstances; removal of one constraint while others remain untackled may result in wasted effort. Situations in the region are complex, and it is often likely that efforts will have to follow prioritised, multiple approaches in order to be successful. It is very important that successes (and failures) are well documented, and provide meaningful lessons learned to the rest of the region. At the same time the region should also stay abreast of global developments in this field on order to profit from experiences elsewhere.

The current climate is generally favourable for transboundary development in the region. There is good ecological, cultural, economic and political rationale for it. There is a remarkable amount of support, enthusiasm and political will at most levels and in nearly all stakeholder groups. Opportunities are being explored and recognised rapidly by stakeholders. At the same time, the constraints are many and varied. In some cases the transaction costs of overcoming the constraints will be too high. It may be that a large proportion of transboundary collaboration remains at a local and less formalised level rather than proceeding to a centrally recognised and formal level. Given the huge range of complex individual circumstances in transboundary areas, there is no one ideal formula for

TBNRM development. Experimentation, flexibility and variety will be important ingredients in TBNRM development in the next few years and decades in Southern Africa.

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Appendix 1: People consulted during the study

	LAST NAME	ORGANIZATION	COUNTRY
		Campfire Association	Zimbabwe
		Chiredzi & Chipinge Rural District Councils	Zimbabwe
		Malilangwe Conservancy	Zimbabwe
		Save Valley Conservancy	Zimbabwe
		Wildlife Producers Association	Zimbabwe
		WWF Harare Office	Zimbabwe
staff		Zimbabwe Trust	Zimbabwe
Joanne	Addy	Kalahari Conservation Society	Botswana
Vahid	Alavian	Rankin International	United States
Janis	Alcorn	Biodiversity Support Program c/o WWF-US	United States
Luzia	Almeida	World Bank	Angola
Jeremy	Anderson	International Conservation Services	South Africa
Simon	Anstey	IUCN	Mozambique
Defrair	Bandula	SADC FSTCU (fishery)	Malawi
Bantsi	Bantsi	Department of Wildlife and National Parks	Botswana
Patrick	Bergin	African Wildlife Foundation	Tanzania
Jerry	Bisson	USAID G/ENV	United States
January	Bojo	World Bank	United States
Dr. O.	Borquin	Game Rangers Association	South Africa
Chris	Brown	Namibia Nature Foundation	Namibia
Janet	Brumme	DBSA	South Africa
Marcus	Buzberger	Helvetas	Mozambique
Candace	Buzzard	USAID RCSA	Botswana
Richard	Carroll	WWF-US	United States
Kent	Cassels	World Conservation Monitoring Centre	United Kingdom
Elsa	Chang	World Resources Institute	United States
Oliver	Chapeyama	USAID RCSA	Botswana
Brian	Child	LIRDP	Zambia
Hastings	Chingoko	IUCN ROSA	Malawi
Gary	Cohen	USAID	Namibia
Arlito	Cuco	Direccao Nacional de Florestas e Fauna Bravia	Mozambique
James	Culverwell	Consultant	Mozambique
Maria	da Luz Duarte	IUCN	Mozambique
Armindo Mário Gomes	da Silva	Okacom	Angola
Derek	de la Harpe	Malilangwe Conservation Trust	Zimbabwe
Júlio	de Morais	Sector de Agricultura e Pescas, Delegação da União Europeia	Angola
Rod	de Vletter	World Bank	Mozambique
B.	deVilliers	Open Africa	South Africa
Johan	du Toit	Tropical Resource Ecology Program	Zimbabwe
Nic	Ellengogen	Theater for Africa	South Africa
Dries	Engelbrecht	Kalahari Gemsbok NP	South Africa
Saliem	Fakir	IUCN - South Africa	South Africa
Bernado	Ferraz	Ministry of Environment	Mozambique
Chris	Foggin	Department of Veterinary Services	Zimbabwe
Pat	Foster-Turley	USAID	Botswana
Mark	Freudenberger	Chemonics	Madagascar
Deo – Gratias	Gamassa	Vice President's Office	Tanzania
Howard	Geach	Blanchard Concession	Mozambique
Cynthia	Gill	USAID G/ENV	United States
Eugene	Gouws	Elephant Coast Company	Mozambique
Anthony	Hall Martin		South Africa
John	Hanks	Peace Parks Foundation	South Africa
Lee	Hannah	Conservation International Africa Program	South Africa
Jon	Hansell	DFID	Zimbabwe
Jeremy	Harrison	World Conservation Monitoring Centre	United Kingdom
Dawn	Hartley	NES	Lesotho
John	Hough	UNDP/GEF	United States
George	Hughes	KwaZulu-Natal Parks Conservation Service	South Africa
Daniela	Isola	Cooperation for Development of Emerging	Namibia

LAST NAME		ORGANIZATION	COUNTRY
		Countries	
Rodney	Jackson	The International Snow Leopard Trust	United States
Steve	Johnson	SADC NRMP Dept. National Parks and Wildlife	Malawi
Bruce	Johnson	Land Tenure Center	United States
Deborah	Kahatano	EPIQ	Tanzania
Sam	Kanyamibwa	World Conservation Monitoring Centre	United Kingdom
Steve	Kasere	Campfire Association	Zimbabwe
Yemi	Katerere	IUCN-ROSA	Zimbabwe
G.	Kayukwa	Wildlife Conservation Society	Zambia
Mike	Kock	Ministry of Agriculture, National Veterinary Dept.	Botswana
Soki	Kuenda	Ministry for Environment	Angola
John	Ledger	Endangered Wildlife Trust	South Africa
Bataung	Leleka	SADC-ELMS CU	Lesotho
Manyananda	Lewanika	SADC Traditional Leaders Association for NRM	Zambia
Malan	Lindeque	Ministry of Environment and Tourism	Namibia
Walter	Lusigi	GEF Secretariat	United States
David	Mabunda	Kruger SANDP	South Africa
Ian	Macdonald	WWF-South Africa	South Africa
Cecil	Machena	DNPWLM	Zimbabwe
Samiro	Magane	Direccao Nacional de Florestas e Fauna Bravia	Mozambique
W.	Makombe	NPWLM	Zimbabwe
Lamson	Maluleke	Endangered Wildlife Trust	South Africa
R.	Maluleke	Endangered Wildlife Trust	South Africa
Siriaye	Mamba	Swaziland National Trust Commission	Swaziland
Chieftainess Chiyaba Christine Eva	Mambo	Traditional leader for Zambezi River area	Zambia
Stuart	Marks	Safari Club International	United States
Ana Lúcia Guerra	Marques	Universidade Agostinho Neto	Angola
Rowan	Martin	SASUSG	Zimbabwe
Sub-chief Luckson	Masule		Botswana
Bakari	Mbano	Ministry of Natural Resources and Tourism – Wildlife Department	Tanzania
David	McDermott Hughes	University of California – Berkeley, Anthropology Department	United States
Piergiorgio	Menchini	Legambiente	Italy
Kenton	Miller	World Resources Institute	United States
Lucas	Miranda	Ministry for Environment	Angola
Hermanta Raj	Mishra	GEF Secretariat	United States
Sedia	Modise	Department of Wildlife and National Parks	Botswana
David	Moffat	Secretariat for Eastern African Coastal Area Management (SEACAM)	Mozambique
Robert	Monro	Zimbabwe Trust	Zimbabwe
Karl	Morrison	Conservation International	Botswana
Raymond	Morton	USAID RCSA	Botswana
Bore	Motsamai	National Environment Secretariat	Lesotho
Valencia	Msibi	USAID Regional Center for Southern Africa	Botswana
Barry	Munslow	Environmnent and Development Consultant to the Swedish Embassy in Angola	United Kingdom
Simon	Munthali	WB TFCA DNFFB CP	Mozambique
James	Murombedzi	Ford Foundation	South Africa
Marshal	Murphree	CASS, UZ	Zimbabwe
Mike	Murphree	SASUSG	Zimbabwe
Henry	Mwima	NPWS	Zambia
Calvin	Nera	CASS, UZ	Zimbabwe
Kate	Newman	WWF-US	United States
Herbert	Nkala	Rainbow Tourism Group	Zimbabwe
Henri	Nsanjama	WWF-US	United States
Rugemeleza	Nshala	Lawyers Environmental Action Team (LEAT)	Tanzania
Milagre	Nuvunga	Ministerio da Coordenacao de Accao Ambiental	Mozambique

	LAST NAME	ORGANIZATION	COUNTRY
K.	Nyasulu	SADC FSTCU (Forestry)	Malawi
Gordon	Orians	Department of Zoology, University of Washington	United States
Steve	Osofsky	WWF-US	United States
Fernando	Pacheco	ADRA	Angola
Danie	Pienaar	Kruger Park	South Africa
Nigel	Pollard	Grupo Madal	Mozambique
Jane D.	Pratt	The Mountain Institute	United States
Thulo	Quotosakane	National Environmental Secretariat	Lesotho
Sanath ("S.K".)	Reddy	USAID Regional Center for Southern Africa	Botswana
Antonio	Reina	Endanged Wildlife Trust	Mozambique
Timothy	Resch	USAID	United States
Mark	Renzi	EPIQ NRM Project	Tanzania
Karen	Ross	Conservation International	Botswana
Vladimir	Russo	Juventude Ecológica Angola	Angola
Ronald	Ruybal	USAID NRMP SO2	Tanzania
Dr. Lewis	Saiwana	Department of National Parks and Wildlife	Zambia
Samson	Sambo	Endangered Wildlife Trust	South Africa
Trevor	Sandwith	Kwazulu Natal National Conservation Service - Queen Elizabeth Park	South Africa
L. E. R.	Sefu Ligomeka Jiah	SADC NRMP	Malawi
João	Serodio	Ministry for Environment	Angola
Mingma	Sherpa	WWF-US	United States
Mwape Mr. Mr.	Sichilongo Akashambatwa Chirongo	NPWLM	Zimbabwe
Paul	Siegl	WWF Tanzania	Tanzania
L.	Simwanda	Environmental Conservation Society of Zambia	Zambia
Abraham	Sithole	Chiredzi RDC	Zimbabwe
Martin	Skottke	GTZ-SADC Forestry	Malawi
Kenneth	Small	Development Bank of South Africa (DBSA) OUZIT SDI	South Africa
Elizabeth	Soderstrom	USAID	Botswana
Laurent	Somé	Biodiversity Support Program c/o WWF-US	United States
Bartolomeu	Soto	World Bank TBCA Programme Ministerio da Agricultura DNFFB c/o DNFFB (Direccao Nacional de Florestas e Fauna Bravia)	Mozambique
Alan	Sparrow	CESVI & BFA	Zimbabwe
	Spriggs	USAID RCSA	Botswana
Donna	Stauffer	USAID/RCSA	Botswana
Conrad	Steenkamp	Endangered Wildlife Trust	South Africa
Achim	Steiner	World Dams Commission	South Africa
Clive	Stockil	Save Valley Conservancy	Zimbabwe
Jennie	Storm	NNF	Namibia
Kare	Stormark	NORAD	Zimbabwe
Yoland	Stowell	IUCN	South Africa
Julian	Sturgeon	ART-SA	South Africa
Meg	Symington	LAC c/o WWF-US	United States
Chris	Tanner	Consultant	Mozambique
Dina	Tava	Direccao Nacional de Turismo	Mozambique
Russell	Taylor	World Wildlife Fund	Zimbabwe
Mads	Tiemroth	Direccao Nacional de Turismo	Mozambique
Peter	Tilley	Consultant	Mozambique
Peter	Toima	Maasai Advancement Association (MAA)	Tanzania
March	Turnbull	Peace Parks Foundation	South Africa
J.	Van der Heide	Royal Netherlands Embassy	Zimbabwe
Johaan	Van der Merwe		South Africa
Anthony	Vance	USAID Regional Center for Southern Africa	Botswana
Freek	Venter	Kruger National Park Scientific Services (Phalaborwa)	South Africa

	LAST NAME	ORGANIZATION	COUNTRY
Leon	Viljoen	Department of Foreign Affairs	South Africa
John	Waugh	IUCN-US	United States
Chris	Weaver	WWF/US	Namibia
Barbara	Weickoff-Baird	Independent Consultant	United States
Gary	Wetterberg	USDA Forest Service (NFS)	United States
Uli	Weyl	GTZ – Malawi	Malawi
Douglas	Williamson	FAO	Italy
Ed	Wilson	WWF - SARPO	Zimbabwe
Dorothy	Zbicz	Duke University – Nicholas School of the Environment	United States
Beatrice	Zulu-Siwila	USAID Regional Center for Southern Africa	Botswana

A Global List of Adjoining Protected Areas

by
Dorothy C. Zbicz - Duke University

1. Introduction

In recent years, the concept of transboundary protected areas has gained increasing international attention, being promoted as a potential vehicle for both biodiversity conservation and advancement of peaceful relations across international boundaries. New emphases on ecosystem and community-based approaches to natural resource management and conservation have reiterated the obvious fact that political boundaries rarely coincide with ecological boundaries, and ecosystems are often severed by political borders. Nowhere is this more true than in Africa. Community-based approaches to natural resource management involving multiple stakeholders and divergent land uses are already difficult, but when conservation area boundaries are international, the process becomes even more complex as all the political, security and cultural issues of international boundaries are included. In order to examine transboundary cooperation on natural resource management and conservation and to explore where it might be successfully implemented, a baseline is needed. One such starting point is all places in the world where officially designated protected areas adjoin across international boundaries. In most cases, these provide evidence of transboundary ecosystems and often of shared natural resources. The table included in this Appendix contains a *Global List Of Adjoining Protected Areas*, also referred to as transfrontier protected area complexes,[1] as of mid-1998 (Zbicz, 1997a). Although ever-evolving, this list is a useful place to begin an analysis of transboundary conservation and natural resource management.

2. Compiling the Global List of Adjoining Protected Areas

Compiling a comprehensive list of adjoining protected areas involved over two years of effort on the part of the author and the assistance of countless protected area experts and professionals. The process began with a list of seventy pairs of "Border Parks" compiled by Jeremy Harrison and Jim Thorsell for the Border Parks Workshop held at the first Global Conference on Tourism in Vancouver in 1988. (Thorsell, 1990). This list was updated with other regional lists from various sources and from the many individuals at Duke University working with protected areas around the world, as well as with input from protected area professionals attending the IUCN World Conservation Congress in Montreal in October 1996. In the spring of 1997, the author spent several weeks at the World Conservation Monitoring Centre (WCMC) in Cambridge, UK verifying this compiled list with the Centre's Protected Areas Database and its Geographic Information System Biodiversity Map Library. The staff of the Protected Areas Unit also offered assistance and regional expertise. The list was then taken to the World Conservation Union (IUCN) headquarters in Switzerland where the Steering Committee of IUCN's World Commission on Protected Areas was meeting. The WCPA Vice Chairs from each region and the Protected Areas team at IUCN examined the list, making further corrections and additions. Throughout the process, international correspondence through fax, mail and electronic mail permitted ground-truthing of the list by hundreds of protected area managers and professionals around the world. Finally, the list was then updated in 1998 with information received from responses to a global survey mailed, with the assistance of IUCN, to the managers of the adjoining protected areas.

[1] This term was used in the draft version of the list and an accompanying paper by the author and Michael J. B. Green that was presented at the "International Conference on Transboundary Protected Areas as a Vehicle for International Cooperation" in Somerset West, South Africa 16-18 September 1997.

3. Defining Adjoining Protected Areas

One challenging in compiling the list was deciding which protected areas to include. Many names have been used for these areas, including peace parks, transfrontier nature reserves, transborder or transboundary protected areas, border parks, etc. Some of these terms imply a level of transboundary cooperation which may or may not exist. In many cases, all that is "transboundary" about the protected areas is a shared ecosystem, certainly not cooperation or management. For this reason, the term *adjoining protected areas* was selected to describe all those places in the world where protected areas physically meet or nearly meet across international boundaries. Only international boundaries have been included - not internal boundaries within countries.

A second criterion for inclusion on the list relied on the 1994 IUCN definition of protected area. as "an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means."(IUCN, 1994). Areas included on the list must qualify as protected areas by this definition and be assigned one of the six IUCN protected area management categories (I-VI). In order to meet this criterion, a protected area must be so designated by its host government and must be of a size of at least 1,000 hectares. Since WCMC maintains the official government reports for compiling the UN List of Protected Areas, the WCMC database was used as the authority for official protected area status.

These criteria meant that many complexes of proposed or smaller sites were omitted. A large number of situations exist where a protected area exists on an international boundary, but no protected area exists in the adjoining country. In many of these cases, protection has been proposed on the other side or even be in the process of establishment. For this reason, a second list was created, containing sites where one side of the border has only a proposed protected area or one without an IUCN category (I-VI). This second list of sites which could not be verified in the WCMC database is not included in this Appendix. The *Global List Of Adjoining Protected Areas* included here was compiled before the TFCA Working Group was convened and therefore is perhaps more limited in the sites it includes. The Working Group has considered potential TBCA sites in Southern Africa that might appear on either of the two lists.

4. A Global Portrait of Adjoining Protected Areas

The *Global List* includes 488 different protected areas that adjoin others both within countries and across international frontiers, often providing contiguous habitat for species. These clusters often contain more than two individual protected areas, up to as many as 13. Twenty-seven of these clusters or *transfrontier protected areas complexes* contain protected areas in three different countries. In this list, 136 such complexes have been identified involving 98 different countries, or almost half of the world's 224 countries and dependent territories. An additional 69 complexes are included on the list of potential adjoining protected areas. Together these existing and proposed complexes offer 205 potential opportunities for transboundary natural resource management.

Table 1: Transfrontier Protected Areas Complexes by Regions - 1998

Regions	Transfrontier P As Complexes	Protected Areas	Proposed Complexes	Complexes with 3 Countries
N. America	8	42	4	0
C. & S. America	24	93	15	6
Europe	45	154	26	6
Africa	34	123	12	9
Asia	25	76	12	3
TOTAL	136	488	69	27

One important component of TBCAs is that they involve a transboundary ecosystem. A question on the survey mentioned above asked if the adjoining protected areas shared an ecosystem. Surveys were sent to 132 of the 136 complexes that met the requirements of the study, although 5 were

returned undelivered. A total of 120 responses were received. In spite of the fact that the question is somewhat subjective, all 120 of the responding complexes said that at least two of the protected areas in the complex share ecosystems. Even if all 16 of the other complexes did not share ecosystems, which is highly unlikely, at least 88% of all transfrontier protected areas complexes do. This suggests that adjoining protected areas are indeed usually an indication of transboundary ecosystems.

5. Adjoining Protected Areas - A Place to Begin

One difficulty that has plagued the Working Group has been agreeing on the definition of a TBCA. Is it a geographical entity or a management regime? Over the past several months, less emphasis has come to be placed on "conservation areas" and more on "transboundary natural resource management." This might suggest that the subject of this study is more about management institutions than about geographical identities. Nevertheless, transboundary natural resource management cannot occur unless some geographical region is identified in which to implement it. David Cumming's chapter in this report addresses both of these aspects in defining ecological criteria for establishing TBCAs. However, his first "coarse filter" or criterion for inclusion of land in a TBCA is geographical:

> 4.1.1 Existing designated national park, protected area, game or wildlife management area, indigenous forest area on an international boundary, or sufficiently close to a boundary to be part of a larger transboundary ecosytem, where there is a protected area on the boundary, or within the same ecosytem, in a neighboring country (Cumming 1998).

This *Global List of Adjoining Protected Areas* provides a set of potential geographical areas which satisfy this first "coarse filter." It identifies 136 complexes around the world where protected areas adjoin across international boundaries. As mentioned earlier, this project was begun before the TBCA Working Group began its work. The list was compiled as the first step in a larger study which is examining factors that contribute to or inhibit transboundary cooperation between adjoining protected areas, which included the earlier mentioned survey mailed to the adjoining protected area managers around the world. The survey results should complement this TBCA study and provide global lessons learned about cooperation between adjoining protected areas which may be applied to promoting transboundary natural resource management in Southern Africa.

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Global List of Adjoining Protected Areas

Note: Complexes may include proposed protected areas and areas designated under national legislation that have not been assigned an IUCN Category (i.e. unassigned), provided that there is at least one established protected area adjacent to another either side of an international boundary.

Countries	WCMC Code	Designated Areas	IUCN Category
North America			
Canada/	612	Kluane National Park & Preserve	II
	18707	Kluane Wildlife Sanctuary	IV
	7406	Tatshenshini-Alsek Wilderness Park/	II
US	13038	Tongass National Forest	IV
	1005	Wrangell-St Elias National Park	II
	35387	Wrangell-St Elias Wilderness Area	Ib
	22490	Wrangell-St Elias National Preserve	V
	1010	Glacier Bay National Park	II
	22485	Glacier Bay National Preserve	V
	35382	Glacier Bay Wilderness Area	Ib
Canada/	626	Waterton Lakes National Park	II
	21193	Akamina Kishinena Provincial Park	II
		Flathead Provincial Forest Reserve/	
US	973	Glacier National Park	II
	100967	Flathead National Forest	VI
Canada/	100672	Ivvavik National Park	II
	100673	Vuntut National Park	II
	101594	Old Crow Flats Special Management Area/	Ib
US	2904	Arctic National Wildlife Refuge	IV
Canada/	66395	Quetico Wilderness Provincial Park	II
		Neguaguon Lake Indigenous Reserve/	
US	21322	Boundary Waters Canoe Area Wilderness Area	Ib
	100955	Superior National Forest	VI
	988	Voyageurs National Park	II
Canada/	4185	Cathedral Provincial Park	II
	18646	E. C. Manning Provincial Park	II
	101678	Skagit Valley Recreation Area	II
	65159	Cultus Lake Provincial Park	II
		Neguaguon Lake Indigenous Reserve/	
US	979	N. Cascades National Park	II
	21389	Pasayten Wilderness National Forest	Ib
Mexico/	101431	Sierra de Maderas del Carmen National Park	
	101457	Cañón de Santa Elena National Forest/	VI
US	976	Big Bend National Park	II
Mexico/	34862	Sierra de los Ajos National Park/	
US	100881	Coronado National Forest	
Mexico/	32971	El Pinacate y Gran Desierto de Altar National Biological Reserve	VI
	18091	Sierra del Pinacate Refugio	IV
	101409	Alto Golfo National Biological Reserve/	VI
US	13771	Cabeza Prieta National Wildlife Refuge	IV
	35472	Cabeza Prieta Wilderness Area	Ib
	35977	Organ Pipe Cactus Wilderness Area	Ib
	1020	Organ Pipe Cactus National	III
		Tohono O'odham Reservation	
Latin America			
Belize/	20224	Rio Bravo Conservation Area Private Reserve	IV
	61957	Aguas Turbia National Park/	II
Guatemala/	26621	Maya Biosphere Reserve	n/a
	30604	El Mirador -Rio Azul National Park	Ia
	102817	Naachtún - Dos Lagunas Protected Biotope/	II
Mexico	19570	Calakmul Biological Reserve	VI

Countries	WCMC Code	Designated Areas	IUCN Category
Belize/	20230	Chiquibul National Park	II
	3314	Columbia River Forest Reserve	VI
	116297	Vaca Forest Reserve	VI
	28850	Maya Mountains Forest Reserve/	VI
Guatemala		Complejo III - Reserva de Biosfera Montañas Mayas Chiquibul	
Costa Rica/	167	Tortuguero National Park	II
	30599	Tortuguero Protected Zone	VI
	12493	Barro del Colorado National Wildlife Reserve/	IV
Nicaragua	30628	Río Indio-Maíz Biological Reserve	Ia
	20220	San Juan Delta	Pr
Colombia/	142	Los Katios National Park/	II
Panama	236	Darién National Park	II
	102255	Punta Patiño Nature Reserve	
Costa Rica/	2553	La Amistad National Park	II
	12491	Las Tablas Protected Zone/	VI
Panama	2552	La Amistad National Park	II
	17185	Palo Seco	VI
	102253	Lagunas de Volcán	IV
Costa Rica/	19402	Gandoca y Manzanillo National Wildife Refuge/	IV
Panama	16787	Isla Bastimentos Marine National Park	II
El Salvador/	9638	Montecristo National Park/	IV
Guatemala/	102815	Fraternidad o Trifinio National Biosphere Reserve/	n/a
Honduras	18804	Montecristo Trifinio National Park	II
El Salvador/		Proposed/	Pr
Honduras/	40996	Río Negro Biological Reserve/	IV
Nicaragua	12652	Estero Real Natural Reserve	II
Guatemala/		Lacandón National Park/	
Mexico	14305	Montes Azules Biological Reserve	Ia
	67671	Bonompak National	III
Honduras/	41014	Río Plátano National Park	Pr
	41045	Tawasha Indigenous Reserve	
	41013	Patuca National Park	II
	41034	Río Coco Natural Monument/	Pr
Nicaragua	2650	Bosawas National Reserve	VI
Argentina/	15	Iguazú National Park	II
	61817	Iguazú Strict Nature Reserve/	Ia
Brazil/	60	Iguaçu National Park/	II
Paraguay		M.S. Bertoni	
Argentina/	97490	Nahuel Huapi National Park	II
	97523	Nahuel Huapi Strict Nature Reserve/	Ib
Chile	90	Puyehue National Park	II
	88	Vincente Perez Rosales National Park	II
Argentina/	7	Lanín National Park	II
	61820	Lanin Strict Nature Reserve	Ia
	2497	Lanín Natural	II
	30844	Monumento Islote Lobos	IV
	16875	Chañy Forest Reserve/	VI
Chile	91	Villarrica National Park	II
	10706	Villarica National Reserve	IV
	9418	Huerqueque National Park	II
Argentina/	6	Los Glaciares National Park	II
	4329	Los Glaciares Strict Nature Reserve/	Ia
Chile	9414	Bernardo O'Higgins National Park	II
	89	Torres del Paine National Park	II

Countries	WCMC Code	Designated Areas	IUCN Category
Argentina/	16873	Copahue -Caviahue Provincial Park/	II
Chile	111	Ñuble Reseserva Nacional	IV
Bolivia/	20049	Iténez Reserva Fiscal/	VI
Brazil	5126	Guaporé Federal Biological Reserve	Ia
	41090	Baixo Sao Miguel State Extractive Forest	VI
	34028	Pedras Negras State Extractive Forest	VI
Bolivia/	36	Eduardo Avaroa National Reserve/	IV
Chile	94112	Liancabur National Park	II
	30043	Los Flamencos National Reserve	IV
Bolivia/	33	Sajama National Park	II
	20030	Sajama Integrated Management	
	20035	Altamachi Vicuña Reserve/	IV
Chile	86	Lauca National Park	II
	9435	Las Vicuñas National Reserve	IV
Bolivia/	98183	Madidi National Park/	II
Peru	7460	Pampas de Heath National Sanctuary	III
Brazil/	101760	Tucumaque Forest Reserve/	VI
Suriname	276	Sipaliwini Nature Reserve	IV
Brazil/	54	Pico da Neblina National Park/	II
Venezuela	4367	Serranía La Neblina National Park	II
Colombia/	9400	La Paya National Park/	II
Ecuador/	2499	Cuyabeño Reserva Faunistica	VI
	186	Yasuni/	II
Peru	98245	Guepí National Reserve	Un
Colombia/	144	Tamá Natural National Park/	II
Venezuela	322	El Tamá National Park	II
	101129	Cerro Machado- El Silencio	VI
	30640	San Antonio- Ureña Protected Zone	V
Colombia/	19993	Catatumbo-Bari National Park/	II
Venezuela	318	Perijá National Park	II
	20068	Región Lago de Maracaibo -Sierra de Peri Protected Zone	V
Europe			
Albania/		Prespa Lake National Park/	
Greece/	674	Prespes National Park/	II
Former Yugoslav Republic of Macedonia	2516	Galichica National Park	II
	1056	Pelister National Park	II
Austria/	102736	Thayatal Protected Landscape Area	V
	103578	Thayatal Nature Reserve/	IV
Czech Republic	30721	Podyjí National Park	II
	4280	Podyji Protected Landscape Area	V
	61419	Palava Protected Landscape Area	
Austria/		Lainsitzniederung Strict Nature Reserve	
	102882	Blockheide Eibenstein Nature Park	V
	5425	Blockheide Eibenstein Nature Reserve	V
		Northern Waldviertel Area/	
Czech Republic	2558	Trebonsko Protected Landscape Area	V
Austria/		Bayerischer Wald, Böhmerwald, Sumava National Park/	Pr
Czech Republic/	4282	Šumava CHKO Protected Landscape Area	V
	26059	Šumava National Park	II
	26059	Sumaveská Raselinisté/	II
Germany	67870	Bayerischer Wald Nature Park Deĩlanderregion	V
	64659	Böhmerwald Biosphere Reserve	Pr
Austria/	31402	Kalkhochalpen Nature Reserve/	IV
Germany	688	Berchtesgaden National Park	II

Countries	WCMC Code	Designated Areas	IUCN Category
Argentina/	16873	Copahue -Caviahue Provincial Park/	II
Chile	111	Ñuble Reseserva Nacional	IV
Bolivia/	20049	Iténez Reserva Fiscal/	VI
Brazil	5126	Guaporé Federal Biological Reserve	Ia
	41090	Baixo Sao Miguel State Extractive Forest	VI
	34028	Pedras Negras State Extractive Forest	VI
Bolivia/	36	Eduardo Avaroa National Reserve/	IV
Chile	94112	Liancabur National Park	II
	30043	Los Flamencos National Reserve	IV
Bolivia/	33	Sajama National Park	II
	20030	Sajama Integrated Management	
	20035	Aftamachi Vicuña Reserve/	IV
Chile	86	Lauca National Park	II
	9435	Las Vicuñas National Reserve	IV
Bolivia/	98183	Madidi National Park/	II
Peru	7460	Pampas de Heath National Sanctuary	III
Brazil/	101760	Tucumaque Forest Reserve/	VI
Suriname	276	Sipaliwini Nature Reserve	IV
Brazil/	54	Pico da Neblina National Park/	II
Venezuela	4367	Serranía La Neblina National Park	II
Colombia/	9400	La Paya National Park/	II
Ecuador/	2499	Cuyabeño Reserva Faunistica	VI
	186	Yasuni/	II
Peru	98245	Guepí National Reserve	Un
Colombia/	144	Tamá Natural National Park/	II
Venezuela	322	El Tamá National Park	II
	101129	Cerro Machado- El Silencio	VI
	30640	San Antonio- Ureña Protected Zone	V
Colombia/	19993	Catatumbo-Bari National Park/	II
Venezuela	318	Perijá National Park	II
	20068	Región Lago de Maracaibo -Sierra de Peri Protected Zone	V
Europe			
Albania/		Prespa Lake National Park/	
Greece/	674	Prespes National Park/	II
Former Yugoslav Republic of Macedonia	2516	Galichica National Park	II
	1056	Pelister National Park	II
Austria/	102736	Thayatal Protected Landscape Area	V
	103578	Thayatal Nature Reserve/	IV
Czech Republic	30721	Podyjí National Park	II
	4280	Podyji Protected Landscape Area	V
	61419	Palava Protected Landscape Area	
Austria/		Lainsitzniederung Strict Nature Reserve	
	102882	Blockheide Eibenstein Nature Park	V
	5425	Blockheide Eibenstein Nature Reserve	V
		Northern Waldviertel Area/	
Czech Republic	2558	Trebonsko Protected Landscape Area	V
Austria/		Bayerischer Wald, Böhmerwald, Sumava National Park/	Pr
Czech Republic/	4282	Šumava CHKO Protected Landscape Area	V
	26059	Šumava National Park	II
	26059	Sumaveská Raselinisté/	II
Germany	67870	Bayerischer Wald Nature Park Deïlanderregion	V
	64659	Böhmerwald Biosphere Reserve	Pr
Austria/	31402	Kalkhochalpen Nature Reserve/	IV
Germany	688	Berchtesgaden National Park	II

Countries	WCMC Code	Designated Areas	IUCN Category
Austria/	1218	Neusiedlersee Nature Reserve	IV
	62709	Neusiedlersee - Seewinkel National Park	II
	102857	Neusiedler See und Umgebung Protected Landscape	V
Hungary	9566	Fertö Hansag National Park	II
Austria/	18769	Donau-Auen National Park	II
	31412	Donau-March Protected Landscape Area	V
	68341	Auen Protected Landscape Area	V
	1220	Marchaven-Marchegg NSG Nature Reserve	Un
	31408	Untere Marchauen Nature Reserve/	IV
Slovakia	19034	Slovakia Zahorie CHKO Protected Landscape Area	V
	12155	Male Karpaty Protected Landscape Area	V
Belarus/	1985	Belovezhskaya Pushcha National Park/	II
Poland	854	Bialowieski National Park	II
Belarus/	1644	Pripiatsky National Park/	Ib
Ukraine	1749	Polessky Nature Reserve	Ia
Belgium/	18950	Hautes Fagnes Eifel Nature Park/	V
Germany	6971	Nordeifel Nature Park Deutsch-belgischer Naturpark Hohes Vend-Eifel	V
Bosnia-Herzegovina/	1055	Sutjeska National Park/	II
Yugoslavia, FR (Montenegro)	15596	Tara National Park	II
	1051	Durmitor National Park	II
Croatia/	15605	Kopacki Rit Special Reserve	Ia
	15602	Kopacki Rit Nature Park/	V
Hungary	9683	Mohacsi Tortenelmi Emlekhely Nature Conservation	IV
	100798	Duna-Drava National Park	V
Czech Republic/	4275	Protected Landscape Area Labské Pískovce/	V
Germany	32666	Sächsische Schweiz National Park	V
	11800	Sächsische Schweiz Protected Landscape Area	V
Czech Republic/	61421	Luzicke Hory PLA	
Germany	20920	Zittauer Gebirge PLA	V
Czech Republic/	645	Krkonoše National Park	V
Poland	852	Protected Landscape Area Iser Mountains/ Karkonoski National Park	II
Czech Republic/	4267	Beskydy Protected Landscape Area/	V
Poland/	12270	Zywiecki Park Krajobrazowy/	V
Slovak Republic	11812	Protected Landscape Area Kysuce CHKO	V
Czech Republic/	12154	Protected Landscape Area White Carpathians/	V
Slovak Republic	12159	Biele Karpaty Protected Landscape Area	V
Denmark/	92491	Waddensea Nature Reserve	
	5762	Vadehavet Wildlife Reserve	IV
	17703	Vadehavet Conservation Area	V
	64575	Vadehavet National Nature Area/	IV
Germany/	4380	Rantumbecken Nature Reserve	IV
	1541	Nord-Sylt Nature Reserve	IV
	33391	Hosteinische Schweiz Nature Park	V
	32669	Schleswig-Holsteinisches Wattenmeer National Park	V
	11837	Niedersaohsisones Wattenmeer National Park	V
	30116	Dollart Nature Reserve	IV
	82256	Nordfriesisches Wattenmeer Nature Reserve/	IV
Netherlands	64617	Dollard Nature Reserve	
	12754	Waddensea Area Biosphere Reserve	n/a
Finland/	654	Lemmenjoki National Park/	II
Norway	822	Ovre Annarjukka National Park	II

Countries	WCMC Code	Designated Areas	IUCN Category
Finland/		Kasivarsi Wilderness Area/	
Norway	12297	Reisa National Park	II
		Raisdoutterhaldi Protected Landscape Area	
Finland/		Vätsäri Wilderness Area/	
Norway/	832	Ovre Pasvik National Park & Reserve/	II
Russian Federation	62446	Pasvik Zapovednikovednik	Ia
Finland/	656	Oulanka National Park/	II
Russian Federation	68351	Paanajärvi National Park	II
Finland/	2561	Urho Kekkonen National Park/	IV
Russian Federation	1700	Laplandskiy Zapovednik	Ia
Finland/		Friendship Nature Reserve, Kainou Park	
		Elimussalo Nature Reserve	
		Lehtua Nature Reserve	
	1523	Ulvinsalo Strict Nature Reserve	Ia
	102007	Juortansalo-Lapinuo Protected Mire	IV
	102041	Lososuo-Saarijarvi Protected Mire	IV
		Iso-Palonen & Maariansarkat Nature Reserve/	
Russian Federation	13988	Kostomukskiy Zapovednik (Friendship Nature Reserve)	Ia
Finland/	40928	National Park/	II
Sweden	30811	Haparanda Archipelago National Park	Pr
	1397	Haparanda-Sandskar Nature Reserve	IV
	106872	Haparanda Skärgård National Park	II
France/	6307	Vosges du Nord Regional Nature Park/	V
Germany	81245	Pfälzerwald Nature Park	
France/	661	Vanoise National Park	II
Italy	10350	Vanoise National Park Buffer Zone/	V
	718	Gran Paradiso National Park	V
France/	664	Mercantour National Park/	II
Italy	14618	Maritime Alps National Park	V
France/	662	Pyrenees Occidentales National Park	II
	703151	Pyrennes Occidentales National Park BZ/	
Spain	893	Ordessa y Monte Perdido National Park	II
Hungary/	13652	Aggtelék National Park/	II
Slovak Republic	4376	Slovenský Kras CHKO Protected Landscape Area	V
Hungary/	30853	Karancs-Madves Protected Area	V
	680	Bükki National Park/	II
Slovak Republic	14146	Protected Landscape Area Cerová Vrchovina	V
Italy/	15346	Foresta Di Tarvisio Nature Reserve	Un
		Regional Park Alpi Guilie/	
Slovenia	2517	Triglavski National Park	II
Italy/	717	Stelvio National Park/	V
Switzerland	915	Suisse National Park	Ia
Lithuania/	31552	Kursiu Nerija National Park/	II
Russian Federation	68348	Kurshaskayja Kosa National Park	II
Former Yugoslav Republic of Macedonia/	1050	Mavrovo National Park/	II
Yugoslavia, FR (Serbia)		Shara Mountains National Park	
Norway/	829	Rago National Park	II
		Pr. Tysfjord Hellembotn National Park/	
Sweden	905	Padjelanta National Park	II
	906	Sarek National Park	II
	3998	Stora Sjöfallet National Park	V
	30818	Sjaunja Nature Reserve	Pr

Countries	WCMC Code	Designated Areas	IUCN Category
Norway/	826	Femundsmarka National Park	II
	9906	Femundsmarka Protected Landscape Area	V
	833	Gutulia National Park/	II
Sweden	10401	Rogen Nature Reserve	IV
	30816	Rogen-Langfjallet National Park	Pr
		Töfsingdalen National Park	
Norway/	125857	Lunddsneset Nature Reserve/	Ia
Sweden	30821	Tresticklan National Park	
Poland/	848	Tatrzanski National Park/	II
Slovak Republic	1975	Tatranský National Park	II
Poland/	106887	Babiogorski National Park/	II
Slovak Republic	12160	Horná Orava CHKO Protected Landscape Area	V
	14115	Babia Hora National Nature Reserve	Ia
Poland/	857	Pieninski National Park/	II
Slovak Republic	646	PieninskiyNational Park	II
Poland/	851	Bieszczadski National Park	II
		Magura National Park	
	67746	E. Carpathian - E Beskeid? Biosphere Reserve/	n/a
Slovak Republic/	67750	E. Carpathians Biosphere Reserve	n/a
	12157	Vychodne Karpaty CHKO Protected Landscape Area/	V
Ukraine	1990	Karpatskiy National Biosphere Reserve, Zapovednik	Ia
	1745	Karpatskiy National Nature Park	II
Portugal/	860	Peneda-Geres National Park/	II
Spain	71215	Baixa-Lima-Serra do Xures Natural Park	V
Romania/	28791	Danube Delta Biosphere Reserve	n/a
	31702	Rosca-Buhaiova National Reserve	Ia
	31703	Letea Nature Reserve/	Ia
Ukraine	4814	Dunaiskie Plavni Nature Zapovednik.	Ia
Romania/	11150	Cazanele Forest Reserve/	IV
Yugoslavia, FR (Serbia)	2522	Djerdap National Park	V
Africa			
Angola/	347	Iona National Park	VI
	2251	Mocamedes Parital Reserve/	IV
Namibia	885	Skeleton Coast Game Park	II
Angola/	4493	Mucusso National Park	IV
		Luiana Partial Reserve/	IV
Namibia/	7442	W. Caprivi Game Reserve/	VI
Zambia	30052	Mamili National Park	II
Angola/	4493	Luiana Partial Reserve/	IV
Zambia	1087	Sioma Ngweze National Park	II
	4081	West Zambezi Game Management	VI
Benin/	597	Boucle de la Pendjari National Park	II
	2253	Pendjari Hunting Zone	VI
	2254	Atakora Hunting Zone/	VI
Burkina Faso	3228	Pama Partial Faunal Reserve	IV
	3226	Arly Total Faunal Reserve	IV
	9264	Arly Partial Faunal Reserve	IV
	4488	Kourtiagou Partial Faunal Reserve	IV
Benin/	12201	"W" du Benin National Park/	II
Burkina Faso/	1048	"W" du Burkina Faso National Park	II
	4488	Kourtiagou Partial Faunal Reserve/	IV
Niger	818	"W" du Niger National Park	II

Countries	WCMC Code	Designated Areas	IUCN Category
Botswana/	7508	Gemsbok National Park/	II
Namibia/	97586	Kalahari Private Reserve/	Un
South Africa	874	Kalahari Gemsbok National Park	II
Botswana/		Northern Tuli Game Reserve/	
South Africa/	21174	Vhembe-Dongola Nature Reserve	IV
		Limpopo Valley National Park/	
Zimbabwe	3059	Tuli Safari Area	VI
Burundi/	9161	Kibira National Park/	IV
Rwanda	9148	Nyungwe Forest Reserve	IV
Cameroon/		Lake Lobeke/	Pr
Central African Republic/	31458	Dzanga-Ndoki National Park	II
	31459	Dzanga Sangha Forest Special Reserve/	VI
Republic of Congo	72332	Nouabalé Ndoki National Park	II
Cameroon/	20058	Korup National Park/	II
Nigeria	20299	Cross River National Park	II
Central African Republic/	2261	Yata-Ngaya Faunal Reserve/	IV
Sudan	5090	Radom National Park	II
Côte d'Ivoire/	1295	Mont Nimba Strict Nature Reserve/	Ia
Guinea/	29067	Mont Nimba Strict Nature Reserve/	Ia
Liberia	9176	E. Nimba National Forest	Un
	20175	W. Nimba National Forest	Un
The Gambia/	2290	Niomi National Park/	II
Senegal	866	Delta (Iles) du Saloum National Park	II
Guinea/	29069	Badiar National Park	II
	29409	Badiar-Sud Classified Forest/	Un
Senegal	865	Niokola Koba National Park	II
Kenya/	1297	Maasai Mara National Park/	II
Tanzania	7437	Maswa Game Reserve	IV
	916	Serengeti National Park	II
	918	Ngorongoro Crater Conservation Area	VI
Kenya/	2417	Boni Dodori National Reserve/	VI
Somalia	13715	Juba Left Controlled Hunting Area	Un
	872	Lag Badana National Park	Pr.
	13710	Bushbush Game Reserve	VI
	13714	Bushbush Controlled Hunting	
Kenya/	19564	Arawo West National Park/	II
Tanzania	1402	Mkomazi Game Reserve	IV
	7433	Umba Game Reserve	IV
Kenya/	758	Amboseli National Park	II
	7633	Loitokitok Forest Reserve/	Un
Tanzania	922	Kilimanjaro National Park	II
	31593	Kilimanjaro Game Reserve	IV
Kenya/	760	Mount Elgon National Park/	II
Uganda	9179	Sebei Controlled Hunting Area	VI
Malawi/	779	Nyika National Park/	II
Zambia	1102	Nyika National Park	II
Malawi/	4648	Vwaza Marsh Wildlife Reserve/	IV
Zambia	4102	Musalangu Game Management Area	VI

Countries	WCMC Code	Designated Areas	IUCN Category
Malawi/	780	Kasungu National Park/	II
Zambia	1088	N Luangwa National Park	II
	1086	S Luangwa National Park	II
	1100	Luambe National Park	II
	1091	Lukusuzi National Park	II
Mauritania/	9310	Diawling National Park/	II
Senegal	867	Djoudj National Park	II
	11653	Gueumbeul Special Faunal Reserve	IV
Mozambique/	4652	Maputo Game Reserve/	IV
South Africa/	116329	Ndumu Game Reserve	II
	39758	Tembe Elephant Park Reserve/	IV
Swaziland		Hlane National Park, Mlawula Nature Reserve	
Mozambique/	20295	Limpopo Valley Wildlife Utilization Area – Coutada 16	VI
	800	Zinhave National Park	II
	799	Banhine National Park/	II
South Africa/	873	Kruger National Park/	II
Zimbabwe	1104	Gonarezhou National Park	II
Namibia/	8785	Ai-Ais Hot Springs Game Park	II
		Fish River Canyon/	
South Africa	30851	Richtersveld National Park	II
Rwanda/	863	Volcans National Park/	II
Uganda/	18436	Mgahinga Gorilla National Park	II
	18437	Bwindi Impenetrable Forest National Park/	II
Democratic Republic of Congo (Zaïre)	1081	Virunga National Park	II
	20331	Rutshuru Hunting	VI
Sudan/	904	Kinale National Park/	II
Uganda	7933/ 31275	Otze- Dufile Wildlife Sanctuary	IV
	64700	Otze Forest Forest Reserve	Un
	3276	Mount Kei White Rhino	IV
Sudan/	1369	Kidepo Game Reserve/	VI
Uganda	958	Kidepo Valley National Park	II
Sudan/	10737	Lantoto National Park/	Pr.
Democratic Republic of the Congo (Zaïre)	1083	Garamba National Park	II
	20036	Mondo Misso Hunting	VI
Uganda/	18438	Rwenzori Mountains	II
	9184	Semliki Controlled Hunting Area	VI
		Semliki National Park	
		Queen Elizabeth National Park	II
	1446	Kyambura Game Reserve/	II
Democratic Republic of the Congo (Zaire)	1081	Virunga National Park	IV
Zambia/	7692	Lower Zambezi National Park/	II
Zimbabwe	2531	Mana Pools National Park	II
	2524	Charara Safari Area	VI
		Sapi , Chewore, Dande Special Areas	VI
Zambia/	2347	Mosi-oa-Tunya National Park	III
	62183	Victoria Falls National Monument/	III
Zimbabwe	1993	Victoria Falls National Park	III
	2530	Zambezi National Park	II
Asia			
Bangladesh/	4478	Sundarbans W. Wildlife Sanctuary/	IV
India	9960	Sundarbans National Park/	Ia

Countries	WCMC Code	Designated Areas	IUCN Category
Bhutan/	7996	Royal Manas/	II
India	1818	Manas Sanctuary	IV
	9232	Buxa Sanctuary	IV
	62663	Buxa National Park	Un
Brunei Darussalam/	39641	Labi Hills	Ia
	18035	Labi Hills	V
		Labi Hills/	Un
Malaysia	3790	Gading Forest Reserve	
	3939	Gunung Gading National	II
Brunei Darussalam/	32948	Sungei Ingei Conservation Area	Ia
	3937	Ensengi Forest Reserve/	Un
Malaysia	787	Gunung Mulu National	II
Cambodia/	12249	Preh Vihear Protected Landscape/	V
Thailand		Yot Dom	
	1415	Phanom Dong Rak Wildlife	IV
Cambodia/	68862	Virachey National Park/	II
Laos/	18872	Dong Amphan Nature Reserve	VI
		Nam Kong Nature Reserve	Pr
		Altopeu/	Pr
Vietnam	12171	Mom Ray Nature Reserve	IV
China/	95461	Jingpo Lake Nature Reserve	II
	95460	Mudan Peak Nature Reserve	VI
	96016	Changbai Mountains Biosphere Reserve/	n/a
N. Korea/	17908	Paekdu Mountain Nature Protection Area/	IV
Russian Federation	1726	Kedrovaya Pad Zapovednik	Ia
China/	96064	Dalai Lake Nature Reserve/	IV
Mongolia/	93538	Mongul Daguur Strict Protected Area/	Ib
Russian Federation	62684	Daurskiy Zapovednik	Ia
China (Tibet)/	95785	Zhu Feng Nature Reserve	Ib
	95784	Jiang Cun Nature Reserve/	VI
Nepal	804	Sagarmatha National Park	II
	803	Langtang National Park	II
	26606	Makalu-Barun National Park	II
	26605	Makalu-Barun Conservation Area	IV
China/	96118	Ta Shi Ku Er Gan Nature Reserve/	Ib
Pakistan	836	Khunjerab National Park	II
China/	95476	Xing Kai Lake Nature Reserve/	VI
Russian Federation	62691	Khankaiskiy Zapovednik.	Ia
China/		Hunhe Nature Reserve	
	95471	Hong River Nature Reserve/	VI
Russian Federation	1715	Bol'shekhekhtsizskiy	Ia
China (Guangxi)/	95872	Daphong Mountain Shui Yuan	VI
	95618	Nan Lei Shui Yuan Lin Nature Reserve/	VI
Vietnam	10360	Trungkhanh	IV
China/	99776	Guan Yin Mountain Nature Reserve	
	95742	Fen Shui Ling Peak Nature Reserve/	VI
Vietnam	10357	Hoang Lien Son #2	IV
India/	1807	Katarniaghat Sanctuary	IV
	691	Dhudhwa National Park/	II
Nepal	1308	Royal Bardia National Park	II

Countries	WCMC Code	Designated Areas	IUCN Category
India/	4578	Valmiki Sanctuary	IV
	12414	Sohagibarwa Sanctuary	IV
	4543	Udaipur Sanctuary/	IV
Nepal	805	Royal Chitwan National Park	II
India/	19683	Kachchh Desert Sanctuary/	IV
Pakistan	6684	Rann of Kutch Wildlife	IV
Indonesia (Kalimantan)/	8673	Gunung Lorentang Karimum National Park/	II
Malaysia (Sarawak)	1300	Lanjak Entimau Wildlife	IV
	12250	Batang Ai National Park	II
Indonesia/	29966	Wasur National Park/	II
Papua New Guinea	4200	Tonda Wildlife Management Area	VI
	4202	Maza Wildlife Management Area	VI
Kyrgyz Republic/	1675	Besharalsky Zapovednik./	Ia
Uzbekistan	1761	Ugam-Chatkal National Park	Ia
Laos/	18893	Phou Xiang Thong National biodiversity Conservation Area/	VI
Thailand	39518	Pha Tam National Park	II
	4674	Kaeng Tana	II
Laos/	61496	Nam Et National Biodiversity Conservation Area/	VI
Vietnam	10363	Sop Cop Nature Reserve	IV
Laos/	12182	Phou Dene Dinh National Biodiversity Conservation Area/	VI
Vietnam	10362	Muong Nhe Nature Reserve	IV
Malaysia (Sabah)/	793	Pulau Penya Park/	II
Philippines	14758	Turtle Island Marine Sanctuary	IV
Mongolia/	93566	Uvs Nuur Basin Strict Protected Area/	Ia
Russia	67722	Ubsunurskaya Kotlovina	Ia
Mongolia/	93579	Khovsgul Nuur National C Park/	II
Russian Federation	68356	Turkinskiy National Park	II

Key to IUCN category field:

Pr proposed protected area
n/a not applicable (as in the case of internationally designated sites, such as biosphere reserves)
Un unassigned (not assigned to a category because the designation/site does not meet IUCN's definition of a protected area)
blank category not yet assigned (often due to inadequate information)

Acknowledgements

The author would like to gratefully acknowledge all the assistance which made compiling this list possible. Michael J.B. Green, then Director of the WCMC Protected Areas Unit, coauthored an earlier paper about this list and presented it at the "Parks for Peace Conference" in South Africa in September 1997. Members of the WCMC Protected Areas Unit provided expertise and assistance in matching list versions with the database. The Protected Areas team at IUCN headquarters shared expertise and support in mailing the survey to adjoining protected area managers. The quality of the list has also greatly benefitted from the comments of members of IUCN's World Commission on Protected Areas, researchers at Duke University, and last, but not least, the hundreds of protected area managers around the world who have responded to requests for information and to the survey.