

CBNRM

**community-
based natural
resource
management
manual**

ACKNOWLEDGEMENTS

community-based natural resource management

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This Manual has been written to provide an introduction to community-based natural resource management (CBNRM) in Southern Africa. Countries in Southern Africa are: Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe. CBNRM is based on the principle that land and natural resources should be managed by those people who live with and depend on them. CBNRM does not involve wildlife only but other natural resources and community development as well. Hence aspects covered in this manual can be used by any community.

This Manual is divided into seven chapters, each addressing a different aspect of CBNRM. The aim of the manual is to provide a good understanding of the social, economic, and ecological factors that affect the management of natural resources by communities in the Southern African region.

Examples are taken from across the region, of descriptions of national situations or specific instances of CBNRM projects and programmes.

What are the objectives of a CBNRM MANUAL

For communities and those working with them it is important that they be able to:

- Understand the principles involved in CBNRM;
- Understand and use the tools available for resource management in CBNRM;
- Understand what is involved in the development and functioning of community-based organisations (CBOs);
- Understand the linkages between local level decisions and the wider environment within CBNRM;
- Understand and use the tools for adaptive management within CBNRM.
- Compare the differences in policy and legislation between various SADC countries;



Introduction

All the countries in Southern Africa are currently facing many challenges. These include: low rates of economic growth; severe reduction of natural resources in areas of high population density; increased frequency of extreme weather events (both droughts and floods); and HIV/AIDS.

CBNRM is an approach to the management of land and natural resources which is relevant to, and has the potential to provide solutions to some of the problems found within the communal lands of Southern Africa, where the majority of people live with, and depend on, natural resources.

This first chapter provides an introduction to CBNRM and the principles that guide its use. There are differences in interpretation and definition from country to country and even within countries. To overcome these differences, a consistent use of words and terminology is maintained in this manual wherever possible.

How did community-based natural resource management (CBNRM) evolve in the region?

In Southern Africa colonial governments generally created three categories of land: private land, state land and communal land. In addition, the management of land and natural resources was the responsibility of the state. For the residents of communal lands, where the majority of indigenous people lived, this situation meant that they:

- Did not have any role to play in major decisions regarding the use and allocation of natural resources and land.
- Were restricted to using natural resources for subsistence purposes only and were prevented by law from any form of commercial use of natural resources.

CBNRM evolved over the last 20 years with the realisation that for sustainable use of natural resources, people living with the resources should be responsible for their management and benefit from using the natural resources.

This is different from the state-centred approach described previously. CBNRM has been developed and promoted by dedicated professionals on pilot basis. Most SADC countries are now developing CBNRM policies and legislation as a result.

- CBNRM consists of a mixture of new management arrangements. Importantly, CBNRM is an approach that can be applied not only to wildlife but to all renewable natural resources, as well as to land.
- CBNRM deals not only with the management of natural resources but with the benefits that are earned from their use.
- CBNRM approaches are particularly applicable where land is communally owned, natural resources are being used and managed by communities rather than private landowners. In Southern Africa this refers primarily to the communal areas or lands.
- There ought to be an improvement in the status of the resources as a result of CBNRM. There should also be an improvement in the livelihoods of those who live with, and are managing, the natural resources. This last point is important because it stresses the sustainable use of natural resources for the benefit of people.
- CBNRM also includes a range of more specific approaches that have been developed over the last two decades.

What are the principles of successful CBNRM?

Over time, a set of principles has emerged from the analysis of the performance of CBNRM programmes in Botswana, Namibia, Zambia and Zimbabwe. Briefly, these are:

- To determine whether the benefits of managing a resource exceed the costs, the resource must have a measurable value to the community.
- Those communities living with the resource should receive higher benefits than those who do not.
- Smaller groups are more likely to better manage their resources than larger groups.
- The community or group that lives with the resource should also be the same as the group that makes the decisions over the resource and the same as the group that benefits.



Those communities living with the resource should receive higher benefits.

- Communities should benefit from practising good management. Similarly when communities do not invest in management, then the benefits should fall.

Some difficulties facing CBNRM

CBNRM programmes are, in many ways, a new and different approach to the management of land and natural resources. A number of common problems have emerged from CBNRM programmes and projects in the Southern African region.

These are:

1. **Scale:** in the case of wildlife, the home range of some species might extend beyond the boundaries of the community that is the unit of management. This means that the community must collaborate on important issues with its neighbours: either other communities, private landowners or the state (managing protected areas).
2. **Time:** some natural resources, for example commercially important timber species or elephants, take a long time to mature. This means that decisions which are made now will have an impact on the resource only in several years' time.
3. **Complexity/difficulty:** The laws and policies controlling the use of natural resources in many countries over-laps and is outdated. Communities themselves are also very complex and diverse. As with any change, some groups might gain from CBNRM whilst others stand to lose.
4. **Implementation:** successful CBNRM requires dedicated and skilled implementation to change policy and legislation into action. A broad range of NGOs, in partnership with governments, have been primarily responsible for implementation.
5. **Land tenure:** Basically, CBNRM programmes change the ownership and control over natural resources. Some control and some benefits are handed over from the state to communities. In some cases this is supported by legislation whereas in other cases implementation has come before legislation. Although land management is as important as the management of specific resources, very few CBNRM programmes have dealt with the issue of the land tenure systems in Southern Africa.
6. **Partnerships:** CBNRM has led to the development of a range of new partnerships. These include:
 - Private sector – community partnerships, for example hunting and tourism enterprises in Namibia, Botswana and Zimbabwe.
 - Government – community partnerships, for example on the boundaries of state protected areas.
 - Government – NGO partnerships, for example between the agencies responsible for wildlife management and NGOs representing producer communities. The most important partnership is probably that between the

private sector and communities. The partnership is (and will continue to remain) important because communities lack the necessary skills and capital (money) to develop wildlife-based business. But there is real concern that many community-private sector partnerships are unequal, with the private entrepreneurs being the dominant partners. Methods and skills to allow communities to mature into full and equal partners have to be developed.

7. Traditional leadership: many newly independent governments marginalised the roles of Traditional Authorities in favour of “modern” political structures such as elected village councils. CBNRM programmes, with their aim of re-establishing community ownership over natural resources, are often faced with the dilemma of how best to structure the new local institutions.

8. Ecological status of the resources: CBNRM is not a solution that can be applied with success in every situation. There are many areas in the communal lands in Southern Africa where the ecological problems are so great that CBNRM approaches might not be viable. To date, CBNRM approaches have tended to work best in those environments that are relatively intact and provide opportunities for generating substantial financial incentives to change the way people perceive and manage their land and natural resources. In areas where natural resources are severely degraded and people are poor, there might not be sufficient incentives to change the way resources are managed.

What is important about CBNRM as an approach?

- **State management is no longer politically or economically viable:** newly independent Southern African governments did not consider the management of natural resources to be a priority. Financial resources were diverted to other sectors, (health, education, and infrastructural development). Military-style methods of enforcing natural resource legislation are also no longer considered appropriate.

- **Livelihoods and the importance of natural resources:** across Southern Africa most of the population live in the communal lands. In all communal lands, the harvesting of natural resources play a significant role in people’s livelihoods. This means that strategies and policies to ensure the sustainable management of land and natural resources are important to national economic development.

Because of the direct link between people’s welfare and the environment, it is important that new approaches and ideas are developed and implemented in natural resource management. The alternative is that people will get poorer and the environmental resources upon which they depend will become scarcer, thereby worsening the already serious poverty trap.

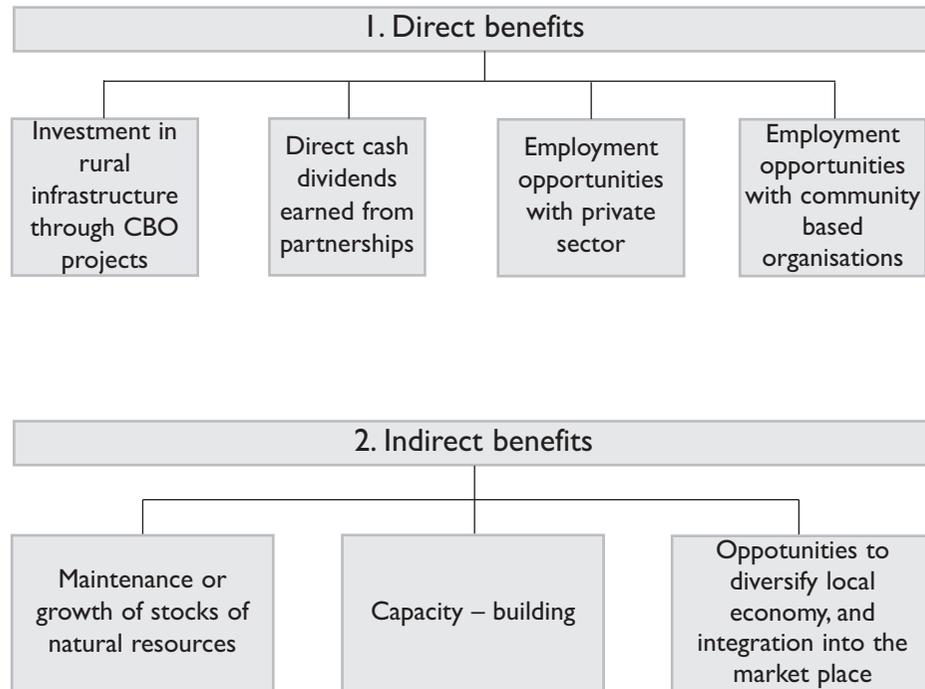


There is a direct link between people’s welfare and their environment.

How does CBNRM link economic development and natural resource management?

In CBNRM there are both direct and indirect links between development and natural resource management.

Figure 1: Benefits from CBNRM



However one of the greatest benefits from CBNRM is the transfer of both the control of, and responsibility for, natural resources from the state to community levels.

An overview of property rights

People use and allocate land and natural resources through systems of property rights. Property rights are the rules that define an owner's rights and duties in the use of a particular resource. The types of property rights, and the strength of those rights, are key factors in determining the status of land and the environment.

Property rights to man-made goods and services are usually well-defined and well-enforced. However, many environmental problems are the result of weak or poorly defined property rights over land and natural resources. This leads to the problem of over-exploitation and degradation of natural resources because there is no incentive on behalf of the user to manage or protect those resources. Although property rights are an important factor in the resolution of environmental problems, it is important to remember certain other factors:

- Within each property rights system there can be a great deal of differences. In some countries in the region, governments enforce the concept of state property through a ministry or a department of national parks effectively (e.g. South Africa) while in others enforcement is weak (e.g. Zambia).
- Without the clear definition of property rights it is not possible to assign responsibilities, and the system will drift into open access as a consequence. However, the resolution of property rights is only one necessary condition for resolving natural resource management problems.

There is no single set of property rights that can be applied as a common solution to natural resource problems. It is important to remember this fact because originally the favoured approach was to recommend private ownership of resources; there is now sufficient evidence to show that there are alternatives to privatisation. Important examples of these are the CBNRM programmes and projects that are being implemented in Southern Africa and elsewhere in the world.

Introduction

There are four commonly defined property rights systems, which differ according to the owner’s rights and responsibilities.

Table 1: Types of property rights regimes, with the owner’s rights and duties (Hanna et al, 1995).

Regime type	Owner	Owner’s rights	Owner’s duties
Private property	Individual	The law guarantees the owner control of access and the right to use the property for socially acceptable uses.	The private property regime also requires that the owner has a duty not to use the property for unacceptable uses.
Common property	Collective	Control of access and the right to use the property for socially acceptable uses. Exclusion of non-owners.	They have a duty to maintain the resource through constrained (limited) rates of use.
State property	Citizens	Generally, decision-making is allocated to a state agency for management purposes. Citizens will have the right to use the resource within a given set of rules.	The duty of the agency is generally to manage the resource or resources in order to promote national social objectives.
Open access (non-property)	None	In the case of there being no ownership of the resource, it is the first person to “capture” the resource who will then claim ownership.	The person who captures the resource has no specified duty or incentive to maintain the resource, limit the use of that resource, or even engage in socially acceptable uses of that resource.

What are the key characteristics of effective common property management?

The seven common characteristics (or ‘design principles’) for effective common property management systems have been defined as:

- 1) **Clear and defined boundaries:** without defining the boundaries and the users of the resource, it is very difficult to prevent “outsiders” from capturing the resource and maintaining a system of open access.
- 2) **Development of local rules:** at the very minimum, these rules should specify when, how, what, and the level of technology used, in respect of the harvest. If these rules are locally developed they are usually fairly effective as they will take into account local differences in the natural resource base.

- 3) **Collective choice arrangements:** for example, if a conservancy wishes to change its rules (e.g. for the registration of members) then this should be possible at the local level. It does not mean, however, that rules can be altered to conflict with, or contradict, national level policy and legislation.
- 4) **Monitors and the monitoring system:** the monitors who assess the resource and the behaviour of the users are accountable to the users (or the monitors are themselves users of that resource). It is very important that the monitoring systems that are developed are low cost, and balanced against the value of the resources.

WHAT ARE THE KEY CHARACTERISTICS OF DIFFERENT PROPERTY RIGHTS SYSTEMS?

- 5) **Graduated penalties:** users who break the rules will receive a graduated penalty. The penalty will depend on the seriousness of the offence and how many previous offences have been committed. Importantly, the penalties should be locally administered.



Penalties for breaking rules should be locally administered

- 6) **Conflict resolution mechanisms:** all common property systems will experience both internal and external conflicts. The ability to resolve these conflicts quickly and cheaply, and to adapt to new issues, is important if the common property system is to survive.
- 7) **Minimal rights to organise:** the users of the resource must have the right to devise their own rules independent of external government authority.

Why are incentives important in the process of institutional change?

Institutional change is a formal description of the process whereby management moves from one property rights system to another. CBNRM generally favours a process of moving from either open access (or a weak common property system) to a strong, functioning common property system. Institutional change is usually a gradual process that can take many years to achieve. For a group (or groups) of people to change from one system of management to another, there has to be economic incentives. The economic incentives can be in the form of:

- Direct benefits** to the stakeholders. For example, many of the CBNRM programmes allow producer communities to pay cash dividends to householders or defined members.
- Indirect benefits** to the stakeholders. For example, as a result of a CBNRM programme, both the quantity and quality of grazing resources might have increased in an area.

Comparing net benefits of institutional change

Some simple guidelines have been developed by economists to explain and predict when institutional change might take place. They refer to the net benefits of the old system or institutions compared against the net benefits of the new institutions. In CBNRM, the 'new institution' refers to a functional common property management system.

- X Institutional change is very unlikely when the net benefits of the new institutions are less than the net benefits of the old institutions.
- X Institutional change is still unlikely when the net benefits of the new institutions are equal to the net benefits of the old institutions.
- ✓ Institutional change is likely when the net benefits of the new institutions substantially exceed the net benefits of the old ones.

These simple guidelines are important because they analyse the net benefits before and after the change. Using the 'net benefit model' is important because it is a reminder that institutional change involves costs:

1. **Transaction costs:** these are the costs that are associated with the process of institutional change. These include formal workshops and meetings with the producer community and their representatives as well as informal or traditional meetings within the community to discuss ideas and options. In these examples, there are the actual financial costs and the costs to community members who are giving up their time.
2. **Management costs.** These are costs associated with the management systems of a community. The management system needs to be well organised to reduce costs. For example, costs will be incurred in surveys to estimate the abundance of resources (e.g. wildlife counts), monitoring private sector partnerships, the implementation of projects etc.
3. **Opportunity costs:** when a producer community makes a choice about institutional change, it is giving up another option that it might have followed. For example, a community might choose a wildlife production system over livestock in a certain part of a conservancy. It means that they have given up the opportunity or option of that livestock production system. Opportunity costs are rarely assessed since they are so difficult to calculate.

CBNRM in some Southern African countries

CBNRM programmes in Southern Africa have grown out of:

- The idea that conservation should involve people and communities rather than being totally state-controlled.
- The concept of economic development, without damaging the environment proposes that by using and managing natural resources, both developmental and conservation goals can be achieved.
- The belief that markets and market forces can create the appropriate incentives necessary to achieve sustainable development.

Southern Africa, with its unique natural resources as well as a large number of people living in poverty but with a close relationship to their natural surroundings has provided perfect opportunities to develop CBNRM programmes. Four examples from the region are briefly described below, to show how various approaches have been used in projects and programmes in different SADC countries.

CBNRM in Chobe enclave, Botswana

The Chobe Enclave is situated within the Chobe National Park, which is the second most important wildlife and tourism area in Botswana after the Okavango Delta. The declaration of protected areas has severely reduced the land available to the 7,500 people of the Enclave, whose economy is based upon crop production, livestock production, and wage employment supplemented by small-scale businesses such as beer-making and natural resources (selling baskets, thatching grass, game meat). Wealth is unevenly distributed, with 10% of households controlling 60% of total homestead assets in the area.

The Chobe Enclave Conservation Trust (CECT) was legally formed in 1994. Its objectives include:

- Sustainably managing the natural resources of the Enclave;
- Conserving and protecting natural resources;
- Integrating development and NRM activities;
- Ensuring equitable allocation of the resources etc.

The CECT earns substantial financial benefits from a company that leases the rights to international trophy-hunting in the area. Up to and including 2003, the CECT has earned nearly US\$1.3 million. However, the CECT does not have total control over the wildlife-based activities in the area; this is retained by the Department of Wildlife and National Parks

CBNRM in Madikwe Game Reserve, South Africa

Madikwe Game Reserve (75,000 ha in area) is situated in the North West Province of South Africa. Madikwe was created in 1991, when the apartheid government was still in power. The land that was used to create Madikwe was taken from large-scale 'white' commercial farmers in order to extend the Bophuthatswana homeland and was severely degraded as a result of livestock production. A feasibility study recommended wildlife as the most appropriate land use with a 15% return on investment and 1,200 jobs created.

The local community consists of three villages next to Madikwe. Livestock production is the primary agricultural activity, though livestock ownership is far from equitable, with a few families owning the majority of the animals.

Madikwe was envisaged as an equal partnership between three stakeholders:

- 1) The State as the owners of the land and the wildlife.
- 2) The community as indirect beneficiaries of economic development.
- 3) The private sector as the providers of capital and expertise for tourism enterprises

Within a year of the decision to implement the Project being made, most of the basic infrastructure was in place and the re-introduction of 8,000 animals (comprising 25 species) had been completed. Madikwe represents the weakest model of community involvement, namely the partnership approach.

CBNRM in the Luangwa Valley, Zambia

The Luangwa Valley lies in the eastern Province of Zambia. The valley represents a major conservation area with two national parks and 6 Game Management Areas. The Luangwa Integrated Rural Development Project (LIRDPA) was initiated in direct response to the massive elephant poaching that occurred in the valley between 1975 and 1986. The LIRDPA was implemented in the Lupande Game Management Area and the South Luangwa National Park (SLNP), an area of approximately 15,000km². It is estimated that about 45,000 people live in the Lupande Game Management Area. Traditionally, natural resources have been a very important part of household livelihoods.

The Project has been through four phases:

Phases I and II represented the traditional integrated rural development model with ambitious investment in infrastructure, agriculture, rural finance and research.

Phases III and IV re-focussed on core activities, namely wildlife management, with an emphasis on CBNRM.

Under Phases I and II, the traditional leaders had exercised a high degree of control over the Project's activities. During Phases III and IV the focus of benefit and management was shifted to villages, through Village Action Groups (VAGs). The Project achieved much greater accountability by making VAGs the beneficiaries as well as the units of responsibility and accountability. In addition, a process was begun whereby VAGs began investing in natural resource management.

In 2000, the Government suspended all international trophy-hunting. Consequently, there were no incentives for wildlife management in Lupande and all other GMAs. The evolution of a strong CBNRM programme in the Luangwa has also been constrained by national-level policy, and political conflicts. Nevertheless, the LIRDPA does represent a strong model of local community involvement in natural resource management, as compared against the other examples given here.

CAMPFIRE in Zimbabwe

The implementation of the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) was possible under a 1982 Amendment of the Parks and Wildlife Act (1975), which allowed Appropriate Authority (AA) for wildlife to be devolved to District Councils. Over the last decade, nearly all the 53 districts in Zimbabwe have applied for and received AA status. Importantly, only about 16 of these districts have sufficient wildlife numbers to support trophy-hunting operations.

All these districts are in areas of lowest agricultural potential, and are technically only considered suitable for extensive livestock and wildlife production. Rainfall is low and variable, and droughts frequent. Their economies are diverse and locally adapted, but generally driven by agro-pastoral production.

WHAT ARE THE KEY CHARACTERISTICS OF DIFFERENT PROPERTY RIGHTS SYSTEMS?

An elected council with community representatives and an executive administrator in the districts. The role of the District Council is to determine policy. Under the general CAMPFIRE model, the wildlife rights for either trophy-hunting or tourism are leased out to a private sector partner. The contract is between the District Council (the Appropriate Authority for wildlife) and the private sector. The process of setting up

the contract, deciding its duration, calculating its value, and formulating its details is determined by the District Council with representatives of communities. This example from Zimbabwe therefore describes a situation where management of local natural resources is not carried out totally at local, community level, but is the responsibility of a district-level authority.



During Phases III and IV of LIRD, the focus of benefit and management was shifted to villages, through Village Action Groups (VAGs).

Introduction

This chapter discusses the importance of including communities in the planning and implementation of development projects; it identifies the stakeholders involved in the participatory process and describes how to conduct a stakeholder analysis. This chapter also links the concept of CBNRM to multinational environmental treaties and the idea of economic development without adversely damaging the environment. (sustainable development.

What is sustainable development?

- In 1992 an international conference on the environment was held in Rio de Janeiro in Brazil known as United Nations Conference on Environment and Development (UNCED). The conference highlighted the fact that clean air and water, productive soils, and a healthy and diverse natural resource base, must be maintained in order to ensure long-term economic development, human well-being, and prosperity. This gave rise to the concept of sustainable development. As a result of this conference, world governments established various agreements to govern their commitment to sustainable development. Some of these multinational environmental treaties (MEAs) are the United Nations Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). These treaties affect how each country will manage and use its natural resources (e.g. CITES and the trophy hunting of the African elephant in southern Africa)
- Governments became increasingly aware that the issues that affect the environment and socio-economic development are interlinked.
- Efforts to improve environmental awareness, reduce pollution, and encourage wise natural resource management began to spread throughout the world.
- There was a growing awareness that sustainable development requires co-ordinated action and participation across all sectors of government and society.

The Convention on Biological Diversity (CBD)

Overexploitation and environmental changes pose serious threats to biological diversity. The loss of too many wild species is dangerous because it cuts vital links in the biological web and breaks down the way that an ecosystem works. Ultimately, these impacts threaten food supplies, and sources of wood, fibres and medicines. In

Southern Africa, a loss of biodiversity will also impact on the sustainability of the wildlife tourism industry. The CBD has three main objectives:

- a) to conserve biological diversity;
- b) to use components of biological diversity sustainably;
- c) to share the benefits of biological diversity.

In the past, people conserved biodiversity by establishing parks and zoos and creating strict laws regarding the use of wild plants and animals. Protected areas still have value regarding wildlife conservation but, since the Rio de Janeiro conference, awareness has grown regarding the close links between biodiversity loss and human population growth and poverty. It is now accepted that the people who live in close contact with, and are dependent upon, wild plants and animals for their survival must be fully involved in all efforts to find solutions to address biodiversity loss. It is important to recognise that the objectives of the CBD are in line with sustainable development thinking and CBNRM objectives. This is because they create a framework for integrating conservation with economic and social development.

Community participation in development

Participation in development can be defined as the process through which people with a legitimate interest (stakeholders) influence and share control over development plans and the decisions and resources that affect them. Giving responsibilities for natural resource management to those closest to the resource, and thus with the greatest incentive to manage the resource well, was one of the main objectives of UNCED. Community participation:

- Facilitates the use of local knowledge and opinions in designing plans, programmes and projects.
- Enhances local ownership and empowers marginalised people by providing opportunities to acquire skills, knowledge and experience.
- Helps to facilitate the integration of marginalised people into wider society, and encourages good governance and economic growth.
- Facilitates co-operation and programme efficiency.



Sharing local knowledge is a crucial aspect of successful participation

Community participation helps to ensure sustainability, make development activities more effective, and builds local capacity. With reference to CBNRM, participation includes community-level involvement in:

- a) the decision-making processes;
- b) implementing the programmes;
- c) sharing the benefits of the programmes;
- d) efforts to evaluate the programmes.

It must be noted that the most economic and ecological success in CBNRM has been achieved when community participation is accompanied by the devolution of ownership rights over resources. Once a community has been given tenure over the resources they are helping to manage, they are able to gain benefits from the use of these resources and their interest in participation is naturally increased.

Who are stakeholders in NRM implementation?

Stakeholders in carrying out NRM include all those who are affected by, or can influence, development planning and the manner in which a programme is implemented. They can include individuals, groups of people, or institutions:

Secondary stakeholders are those who are interested in the project but not directly affected by it. They are, however, able to influence the outcome of the project either through contributing resources and expertise, and/or through their ability to prevent environmental or social impacts, and/or because they have political influence in the project. Examples of secondary stakeholders include: politicians, local government authorities, national social and environmental agencies, NGOs, development agencies, commercial enterprises and private sector businesses, research institutes, and universities and colleges.

Primary stakeholders are those who are directly affected (either positively or negatively) by the proposed development. Marginalised people are often among this group. Examples of primary stakeholders include:

- People who own land or assets that will be affected by the project;
- People who use agricultural land, forests, or rivers that will be affected by the project;
- People living in informal settlements within the project area;
- Migrants attracted to the project and its potential benefits;
- People's organisations and institutions affected by the project (e.g. religious groups, farming co-operatives etc.);
- Locally disadvantaged groups and/or voiceless groups such as the very poor and (in some societies) women;
- Indigenous or tribal people living in the project area who may have specific natural resource or cultural rights that are protected by national or international law;
- People from nearby villages who may be used as potential sources of labour.

Most development activities that involve natural resource use have multiple stakeholders, often with competing aims concerning the same resource. Therefore the successful implementation of policies relating to the use and management of natural resources depends on creating co-operative partnerships between all stakeholders

What is stakeholder analysis?

Stakeholder analysis is a technique used to identify and assess the importance of key stakeholders in a development activity. In conflicts over natural resources, stakeholder analysis provides a framework for examining who is involved, where their interests lie, and how they relate to each other in terms of power. Ultimately, the goal is to help find ways to create a “win-win” situation, where potential areas of conflict are turned into opportunities for partnership and mutual benefit. Stakeholder analysis is a tool that is increasingly being used in CBNRM research for integrated planning and conflict management.

The main aim is to gather information on stakeholders. This is usually done in a ‘workshop’ setting, where the interested and affected parties come together and are encouraged to participate in voicing their interests and concerns. The steps involved are outlined below.

Step 1: identify all the people, groups, and institutions that will affect, be affected by, or are interested in, the outcome of the proposed project. These are separated into whether they are primary (affected) or secondary (interested) stakeholders and listed as such.

Step 2: Identify the specific interests that each stakeholder has in the project, their attitudes, and how influential they are.

‘Stakeholder interests’ considers issues like: the project's benefit(s) to the stakeholder; the changes that the project might require the stakeholder to make; the project activities that might cause damage to, or create conflict for, the stakeholder.

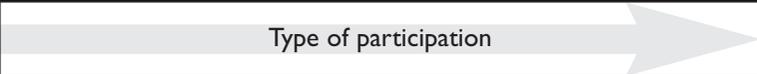
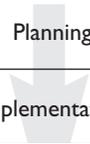
‘Stakeholder attitude’ to the project consider the best estimate of the stakeholder's attitude, from supportive through to opposed

Note should be made of how confident the workshop group is about the estimates regarding the stakeholders’ attitudes.,

‘Stakeholder influence’ evaluates the power a stakeholder has over the project, i.e. the power to control what decisions are made, facilitate implementation of the project, or exert influence over other stakeholders.

Step 3: This step identifies the stakeholder importance. ‘Importance’ indicates the priority given to satisfying the stakeholder’s needs and interests during the project and is different from influence. Consider impoverished subsistence farmers. Their influence regarding a project may be low but, if the project is aimed at helping them improve their circumstances, then their interests and opinions have high importance to the success of the project. To determine importance one can ask the question: “How important are the stakeholder’s interests to the success of the proposed project?”.

Step 4: The final step considers the actions that are needed to obtain stakeholder support and reduce conflict. To do this, it is necessary to define which stakeholders should participate, in what ways, and at what stage of the project. A participation table can be drawn to show this.

	Type of participation 			
Stage in the project cycle	Who needs to be informed?	Who will be consulted?	What partnerships must be formed?	Who takes control?
Planning 				
Implementation				
Monitoring & evaluation				

What lessons have been learned from the implementation of CBNRM in the region?

One of the most important lessons that has been learned mainly from the large-scale commercial farmers of South Africa, Namibia and Zimbabwe has been that wildlife production systems can, under certain conditions, produce greater financial returns than normal livestock production. Communities of commercial farmers are

already implementing common property management systems for wildlife, by combining their farms into a common area for wildlife which are often referred to as 'wildlife conservancies'. There are lessons to be learnt from the commercial sector in terms of the development of agreements that allow wildlife to be managed across different properties.

- CBNRM aims to change rural Africa's attitudes towards wildlife which were moulded by nearly 100 years of colonial rule with rural people being denied access to, and the benefits from, wildlife resources. Changing these attitudes takes time.
- Sustained changes in the way resources are managed takes time and continuity in terms of support which can be limited by donor funding cycles.
- Diversification of CBNRM programmes to resources other than wildlife has been extremely challenging. The natural advantage of CBNRM based on wildlife and tourism is that these systems can generate substantial cash income for CBOs. The challenge, however, is that it is those communities without wildlife that have the greatest need to improve the management of their natural resources.

Across the region, CBNRM has been implemented from within differing policy and legislative frameworks. None of these frameworks has fully empowered rural communities to manage their land and wildlife. Consequently, rural communities have never had the same degree of proprietorship over their resources as commercial farmers.

- Protected area management should not be neglected. Across the region, the NRM challenge has been focused on communal lands because of the important links between livelihoods and natural resources. For wildlife-based CBNRM programmes in many countries, the protected areas network provides important habitat areas for many key species. The protected areas are important in the maintenance and expansion of wildlife-based tourism activities. Therefore, the long-term success of CBNRM will, to some extent, depend on the maintenance of successful protected areas.

The Convention on International Trade in Endangered Species (CITES)

CITES is an abbreviation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora. It is one of the best-known pieces of conservation legislation since it was originally signed in 1973. This is because CITES deals with issues which affect the incentives for communities to be involved in NRM. It deals with controversial issues such as the capture and/or exploitation of naturally occurring species of plants and animals for trade.

It prohibits trade in those species threatened with extinction and lists those that can only be traded under certain strict controls. CITES has helped to build up valuable databases on global trade in wild plants and animals and has developed a body of understanding and skills that has contributed to making it a substantially more effective agreement than it was at its formation.

- However, CITES makes the assumption that trade in endangered species is the major cause of their declining populations. Whilst this is true for certain species, (e.g. black rhino), other vital factors such as growing human populations, rural poverty, habitat loss and climatic changes are not addressed by the Convention. Undoubtedly, a major shortcoming of CITES is that it does not consider the conservation of biodiversity in relation to the livelihoods of communities.

What was the principal objective behind the founding of CITES?

The primary objective of CITES is to create an internationally accepted system for controlling trade in wildlife and wild plants so as to reduce, as far as possible, the chances of illegal trade in their products. It is important to note that CITES focuses on illegal trade, which is considered the primary source of over-exploitation of vulnerable and rare populations. It is also important to recognise that CITES only deals with international trade. In many developing countries, there is a significant internal trade in endangered species of flora and fauna.

What causes species extinction?

Before examining the performance of CITES, and in particular the impact of CITES in Southern Africa, it is important to understand the concept of species extinction (disappearance) and different aspects of it.

- Absolute extinction is the situation that exists when there is no living representative of a species remaining anywhere on Earth.



Absolute extinction means the end of a species on earth, forever.

Commercial extinction: is that point at which it is no longer commercially practical to harvest a species because the costs of capture exceed the benefits that can be earned from it. Fish stocks provide a good example of a case where a species might be depleted to such an extent that it is no longer viable to harvest it. It is important to note that with good management, species can often recover from a position of commercial extinction.

- **Regional extinction:** refers to the situation whereby a species becomes extinct from a specified range that it previously inhabited, although there might be populations of the species remaining elsewhere in the world. An example of regional extinction is the loss of black rhino from the Luangwa Valley in Zambia.

In order to prevent further cases of extinction (either absolute, commercial or regional) it is important to understand the causes of extinction, which include:

- Habitat destruction is one of the most important causes of species extinction. This can be through clearing wildlife habitat for agriculture and settlement and has been one of the major causes of the loss of biodiversity in Southern Africa.
- over-exploitation or over-harvesting is a frequent cause of extinction in commercially valuable species.
- There are several other reasons why a species might become regionally or globally extinct. These include: pollution of habitats; the impact of toxic chemicals and pesticides; and the invasion by alien species. In Southern Africa, these three reasons are not yet serious causes of extinction, when compared with the consequences of habitat loss and over exploitation.



Commercially valuable species such as the rhino can become extinct.

Impact CITES in Southern Africa

In Southern Africa, CITES has the highest profile of any of the current MEAs., due to the dependence of most CBNRM programmes on trophy hunting of key species such as elephants. The high profile of ivory has probably led to a reduction in illegal killings of elephant in Southern Africa. There is, however, still substantial and indeed rising demand for ivory in Asia, particularly in China.

The experience from Zambia (and specifically the Luangwa Valley), shows that elephant numbers can decline very rapidly in conditions that allow illegal activities to flourish. There was however a reduction in elephant numbers across the region, in the 1970s and 1980s, due to loss of habitat as well as illegal killings. At the start of the 20th century, elephant numbers in Southern Africa were very low. Now, certain populations are considered a major ecological problem because there are too many of them.

This supports shows that given the appropriate habitat and management, wildlife populations can recover from severe shocks such as disease, illegal use, and population decline caused by drought.

Effective management and the maintenance of habitat are important in successful African elephant management. Programmes outside the state-protected areas network that create incentives for elephant management are therefore important components of sound elephant management practices. Nevertheless, communities typically do not have, or do not produce, large quantities of ivory. For CBNRM programmes, the primary importance of elephant is through the income that can be earned from trophy hunting. CITES currently exempts (through a quota system) ivory being moved as a result of trophy hunting so there no conflict of interest.

Introduction

What is a Community-Based Organisation (CBO)?

For CBNRM to be successfully implemented, strong local community organisations need to be in place. In CBNRM Community-Based Organisations (CBOs) are usually formed around the management of a particular resource by the community. A water point committee, a wildlife committee and a communal conservancy are examples of Community-Based Organisations (CBOs). These organisations represent the community in the management of the resource using agreed upon guidelines and rules. Depending on the resource, CBOs will be formed in line with the legal framework and the associated benefits. The structure, financial and human resources as well as the defined rules will determine its effectiveness.

CBOs must be capable of making decisions, fulfilling and coordinating management activities, and communicating with the members that they represent.

How is a CBO formed?

When a community has identified a resource that they want to manage, they can come together and form an organisation defining the decision-making roles, rules and responsibilities and workings of that organisation. Although conservancies are used as the major example, the criteria and approaches also apply to the formation of almost any type of CBO.

How to develop an effective CBO

To set up a successful CBO, it is important to understand the existing local ownership structures and decision making rights. How existing local decision-making structures will be affected by the formation of a CBO, and how best these structures can be combined or accommodated to avoid conflict should be considered. The structured and rules for operation of the CBO must allow it to achieve the purpose for which it was established.

What is the purpose of the CBO?

The CBO should be formed for sound reasons. It must be clear why the organisation exists, what it is expected to manage (money, staff, wildlife, partnerships etc.), and how it intends to achieve its goals (objectives).



Criteria for successful organisational and institutional development can apply to any CBO.

What organisational structure already exists?

People need a good reason to participate in an organisation, and need to be active participants in creating any viable new organisation. If there is a suitable organisation already in place which can take on the role envisaged, it may not be necessary to create a new one.

What is the Scale and nature of resources?

The organisation should relate to the scale, type, and nature of the resources being managed. The income generating potential of the resource should be considered as this has a bearing on the success of the CBO.

What are the local social structures and community dynamics?

The CBO must be built from the social structure of the community. Ensuring that the CBO is neutral and able to operate beyond local powers and politics is essential.

What other factors should be considered for effective CBOs?

The community should build upon their existing knowledge of describing and interpreting their environment with the limitations and potential for use of this knowledge

The structure of the CBO and its institutions must provide incentives for the effective management of resources. The CBO that represents the members must be competent and able to make effective decisions and, where necessary, to monitor and enforce collective decisions. However, there must also be incentives for the members of the CBO to conform to the rules that govern land and resource management.

- For a CBO that is managing natural resources to be effective, it must ensure that those people who are using the resources are involved in the management of the resource. In addition, the formation of an effective CBO must recognise that decisions it makes might have an impact on other people, and particularly other resource users.
- As decision-making in any community rarely involves all the members, a representative system is necessary. This system should allow all groups to communicate their issues and interest, and to be represented by someone they trust and respect.
- In order to become effective a CBO, like any other organisation, will have to have an operational set of procedures and processes, which will need to cover many of the criteria that have been discussed here. In addition, a CBO or a conservancy might include other procedures and processes for: ensuring sustainability; planning, monitoring and evaluation; and ensuring sound financial planning.
- CBOs will be far more effective if partnerships are promoted and established. Whether with other CBOs, government departments at local and regional levels, support NGOs, the private sector, or neighbouring communities, effective partnerships will strengthen performance and success.
- For a CBO to be effective there must be a strong link between the management of the resource and the benefits generated by the management activities. This means that the benefits derived from the use of the resource should go directly and entirely to the CBO as representatives of the community.
- Communities elect representatives to CBOs to act with their interests in mind and to achieve a common purpose. These elected representatives are accountable to their general members and other important stakeholders.
- As CBOs represent and work on behalf of others, all their activities should be open and visible to their members. Whilst a CBO may regularly report to their members, openness and clarity about the operations and decisions taken allow all stakeholders to have trust and confidence in the organisation, at all times.

- Many institutions and conservancies in particular are expected to perform a range of duties that may require new skills or the building of existing capacity. Making provision for this is critical to success. There are many ways that organisations can assist CBOs with capacity-building.
- It is important that all roles and responsibilities within the organisation be clearly established and accepted. This includes the participation of all key local stakeholders, such as the Traditional Authority, Land Boards or Regional Councils. This step is instrumental in gaining and maintaining other people's support, to ensure that the organisation has its due authority and credibility. It is important that regular communication between these groups takes place.

If a CBO is able to establish all the above it will not only be effective but it will also fulfil all its legal obligations (these will differ between programmes and countries).

The social, economic and ecological inventory

Doing a basic inventory of the social, economic, and ecological issues within the area of a potential CBO will allow all the stakeholders to assess the opportunities and challenges that the CBO will face. The inventory can also be used to determine what, if any, start-up financing should be provided. Importantly, the inventory will also link in with the organisational and institutional development process. Establishing the baseline potential will avoid unrealistic expectations amongst the stakeholders and should ensure an appropriately structured CBO.

For example, the Namibian Association of Community-based Support Organisations (NACSO) has developed a tool that assists conservancies in conducting a self-assessment (with external help required for certain aspects) of their potential in terms of their environmental, economic, and social resources. This tool can be used by support agencies to determine the levels and type of support they may provide; it also serves as a simple mechanism for conservancies to establish a realistic idea of their potential. The Conservancy Self-Assessment Tool is deployed by working through a series of tables that help the conservancy to establish values and assessments for:

- a) current and potential wildlife (plains game and big five);
- b) tourism markets (existing and potential);

- c) veld products (current and potential);
- d) biodiversity ('hot spots' and red data species);
- e) social cohesion (positive and negative aspects);
- f) strategic importance (at local, regional, national and global levels).

In the final step, the conservancy and/or external agencies reach their final conclusions and from them draw up recommendations about the levels of investment that should go into the conservancy.

Using the inventory to establish the economic potential of a CBO

The Conservancy Self-Assessment Tool outlined briefly above will give a good indication of the potential of a conservancy from a social, economic and environmental perspective. From here it will become clear where efforts should be focussed. Once all these assessments have been made, the conservancy can make a far more accurate and objective evaluation of the following factors:

- What is the wildlife and tourism potential of the conservancy?
- How long will it take for the conservancy to become financially viable?
- Will the conservancy be able to sustain the use of a dedicated vehicle to meet conservancy requirements?
- What level and duration of funding should/could the conservancy receive from donors? When will the conservancy start contributing to its own running costs?
- What level of capacity-building support (and over what length of time) will the conservancy require?
- Will grants be awarded based on income-generation potential projections?

This is only one option that has been developed and can be adapted and used in a flexible way to suit each individual situation.

What are the steps to follow when setting up a CBO?

The process outlined below helps to ensure that the resources and benefits of a CBO are not 'hijacked' by a select few. Furthermore, it is most useful in enabling the majority of people within the community to see the benefit in managing the resources in order to ensure sustainable use over time. Again, this process will need to be adapted to meet the needs of each emerging CBO; there is no formal step-by-step guide that is applicable to all situations across the region.

The initial steps may be as follows:

1. Establish the natural resource income-generating potential in the area by using a tool such as that described previously.
2. Establish an understanding of the importance of resources to communal livelihoods, what management systems exist, and how decisions regarding resources are taken. Based on these steps 1 and 2, an indication of the realisable potential over the short- and medium-term can be developed.
3. Establish what it is that conservancies want (realistically) to achieve by managing the resources at hand over the short-, medium- and long-terms.
4. Obtain as much information on conservancy formation as possible. Ensure that correct advice is obtained, and learn from the experience of others who have recently gone through the process.
5. Consult within the area for support, input and commitment to the process. Begin by approaching any Traditional Authorities (TA); obtain their support and be sure that they are aware of when meetings and discussions are being held. Keep the TA informed of progress. Also, inform the regional council of your intention to form a CBO.
6. Start the process of identifying who wants to work with whom, in terms of managing wildlife and tourism to meet a particular purpose. This is best done in consultation with any Traditional Authority, as well as by conducting village or farm visits to establish which groups want to work together.

Decision-making frameworks

Creating a suitable body or institution that will be able to exercise the rights over natural resources provided by legislation is essential, and practice has shown that resource producers are truly the most appropriate resource managers. Evidence from Southern Africa has shown that:

- The institution must be empowered to take all key decisions that are required to run the organisation effectively.
- People managing the resources must elect representatives to carry out certain functions on their behalf.
- The institution must be recognised (considered legitimate) by key stakeholders, particularly the government.
- The representatives must be accountable to their membership.
- The membership must be involved in key decisions to do with the running of the institution.
- The roles, responsibilities and decision-making of members, elected representatives and other stakeholders must be clearly spelled out.
- The operations of the institution must reflect good governance, including transparency and good communication.

Figure 2 on the next page is a representation (called an 'organogram') of the decision-making structure for Tsiseb Conservancy in Namibia; it shows an arrangement that is appropriate for a conservancy in the north-west of that country, but contains elements that are relevant for all CBOs/conservancies. The area representatives form the conservancy committee, the legal representation of the conservancy. Working closely with the Traditional Authority, a smaller executive committee is elected from the broader conservancy committee during the Annual General Meeting (AGM). The executive committee appoints and oversees the work of several executive officers who report to the Conservancy Co-ordinator (who in turn oversees the work of the other conservancy staff, namely the office clerk, the community game guards and the office cleaner). The notes alongside the diagram outline the structure and roles in each section of the organogram.

How do institutions organise their decision-making mechanisms?

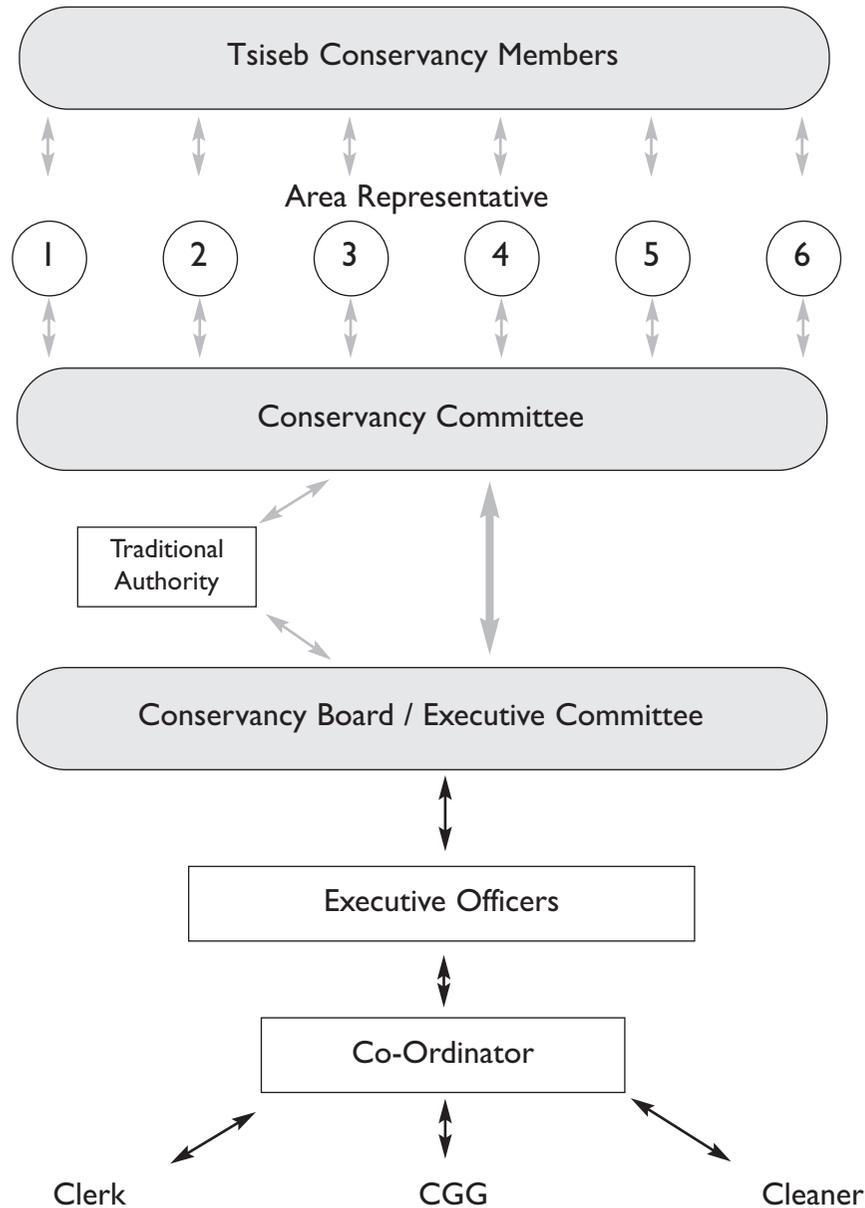
Decision-making mechanisms, should enable CBOs to make choices that are socially, environmentally, and economically sustainable. This is frequently referred to as a triple bottom line approach. This approach is important in addressing social issues such as the stigma of rural areas, improving and diversifying local economies in rural areas that have been long neglected; and reversing the widespread environmental degradation in communal lands, as this underpins rural economic and social development

Holistic Management

Rural areas in Southern Africa depend on the sustainable use of natural resources for their socio-economic development. The improvement of the natural resource base lays the foundation for improved economic and social conditions over the long term. The Holistic Management approach provides a framework for decision makers to make choices that are socially, economically and environmentally sustainable. The core of the framework or model is the establishment of a holistic goal that is set by the decision-makers of the organisation, and against which all decisions and resulting actions are tested. If a CBNRM organisation were to use the HM® framework it would work through the 'visioning' process briefly outlined below:

1. Identify and define the resources being managed and sources of money.
2. Set a holistic goal (HG) for the organisation, which includes:
 - a) A 'Statement of Purpose' for the organisation.
 - b) A description of how the organisation (and its members) must evolve in order to achieve the purpose of the organisation.
 - c) How the resource base must be managed in the future in order to achieve the purpose of the organisation. This also includes how the organisation must be seen by others in order to be successful.
3. Once the holistic goal has been set seven testing questions are then applied to all decisions to establish whether execution of the decision should take place. These questions relate to economic, social, and environmental considerations. Based on the outcome of these questions, a decision will be made on whether to undertake this activity or not.

Figure 2: Tsiseb decision-making structure (organogram).



Members

- Responsible for ensuring the Area Reps. and Board function.
- Responsible for carrying out activities, input to Reps.
- Taking responsibility for own areas.

Area representatives

- 1 Traditional Authority rep and 1 elected rep per area.
- Meet quarterly as part of the Conservancy Committee.
- Represent areas.

Conservancy committee

- Voting members – 6 area reps + TA reps, 6 Board members.
- Non voting – RC.
- Co-coordinator (secretary).
- Stakeholders invited as needed.
- Meet quarterly.

Conservancy board / executive

- 6 members elected at the AGM.
- Office bearers.
- Meet monthly to make sure work gets done.
- Staff appointed by the board.
- Role is to implement decisions of the CC and board.
- Carry out duties.

The management plan

The management plan provides an outline of the activities to be undertaken by the CBO to fulfil its mandate of natural resource management within the community. The management plan does not only deal with natural resource management issues but cuts across other important activities undertaken by the CBO. The process by which the management plan is compiled is very important. Participatory methods, through which community representatives and other stakeholders can contribute to the management planning process, provide an accessible set of information and ideas for use at the grassroots level.

A management plan should rely on highly visual, simple form of presentation. Most of the information can be summarised in key points, tables, maps, posters and charts. Importantly, management plans in this format are accessible to the representatives of the CBO/conservancy (i.e. the committee) and to the residents. The development plan, the annual work plan, and the annual monitoring plan provide a framework for the daily activities of the CBO/conservancy and its employees.

Table 2: Summary of information contained in a conservancy management plan (Stuart-Hill, G., 2003).

Page	Item	Description
1	Overview page	Contains the vision or mission statement. Contains the objectives or goals. Contains the strategies.
2	Zonation map	Map showing land use by activity.
3	Development plan	Shows the major planned development activities in the form of a calendar. A second table gives the costs and potential benefits of the proposed development activities.
4	Annual work plan	Shows the major management activities in the form of a calendar. A second table gives the costs and potential benefits of the proposed management activities.

Page	Item	Description
5	Annual monitoring plan	Shows the important data that needs to be collected for monitoring. This is also in the form of a calendar. A second table gives the costs and potential benefits of the proposed monitoring activities.
6 +	Appendices	The appendices may contain: 1. The resource inventory 2. The maps and all their details 3. Procedures and regulations developed by the conservancy 4. Implementation plans developed by the conservancy for tourism, water, financial management etc.

What could be some of the other major components of a management plan?

1. The land use option plan. The purpose of the land use option plan is to zone areas to maximise benefits from resource use and to allocate conflicting land uses to different areas. It is important to understand “trade-offs” from a local perspective as well as from the perspective of the various stakeholders (e.g. trophy hunters, tourism, craft, veld products, cropping etc.).
2. The strategic plan. It defines where the community wants to be (the vision) and how to get there. A strategic planning process for each resource or aspect being managed should be undertaken in order to identify priorities that need immediate attention. An annual financial review and planning process will also need to be undertaken. Work plans can be developed annually and quarterly for each of the components being managed to ensure that planned activities remain consistent with progress made. The development and activity plans will emerge from the strategic and annual financial planning processes.
3. The development plan. The development plan lays out all the larger (capital) projects that the CBO will undertake. It will need to develop infrastructure to

enable its purpose to be achieved (such as establishing water points, building an office). All infrastructure-related activities are tabled in the development plan and prioritised. This should be based on what development will provide the greatest boost to achieving the Statement of Purpose, including the generation of extra capital for the conservancy. All capital expenditure must be derived from the future income of the conservancy and these developments must be economically viable.

4. The activity plan. The management plan will contain a section where a number of activities undertaken by the conservancy committee or their agents will be documented and monitored.

The impact of HIV/AIDS on CBOs

There are 29.4 million people living with HIV/AIDS in the sub Saharan region (2003). 10 million of these are young people (between 15 – 24 years of age) and almost 3 million are children under the age of 15. Obviously, the impacts of HIV/AIDS on regional CBOs will be considerable, and sufficient planning needs to be done to minimise these impacts if CBOs are to be successful over the long term. This will mean:

- An increase in the number of people who must be trained in both HIV/AIDS awareness and peer education approaches.
- The need to provide access to treatment for employees.
- The need to take responsibility for increasing HIV/AIDS awareness.
- The provision of support to minimise of the impacts of HIV and AIDS on members.
- CBOs developing HIV/AIDS policy and activity plans within the community.

HIV/AIDS will impact on CBNRM organisations' committees, staff and members. Organisations will have to contribute to reducing these impacts, to ensure that their purpose can be reached. They will also need to put in place measures that will reduce new infections and assist those living with HIV/AIDS, wherever possible. The three strategic levels for building an effective response to HIV/AIDS are:

- a) Within support organisations (NGOs) and the private sector.
- b) Within CBOs, such as conservancies.
- c) Within target communities (amongst conservancy members).



CBOs need to take responsibility for increasing AIDS awareness in their community and reducing new infections

Institutional development in the region: The gap between theory and practice

In 1984, at the direction of the Prime Minister, the communal lands of Zimbabwe were divided up into wards and villages (see Chapter 2). The process was aimed at producing an effective system for both economic development and political representation. A village was to consist of approximately 100 households, while a ward was to comprise a maximum of 10 villages, i.e. 1,000 households. Politically, wards were to be represented at the district council (DC) level by a councillor. At the ward level, development activities were to be co-ordinated by the ward development committee (WADCO) and at village level, they were to be co-ordinated by the village development committee (VIDCO). For strategic reasons it was agreed that organisationally, CAMPFIRE should fall under the existing political and planning framework of DCs (later to be RDCs), WADCOs and VIDCOs with the establishment of parallel structure at ward level of Ward wildlife Management Committee (WWMC).

- It was thought that one of the main advantages of facilitating CAMPFIRE activities through this existing political and developmental framework was that this was already 'up and running' and within most areas it was relatively well understood and accepted. However, from the perspective of a NRM-based programme, there were also several major disadvantages to this strategy. These included:

- Wards and villages were political units; they could not take into account ecological criteria and they were frequently inappropriate as units of wildlife production. They were imposed rather than self-defined units.
- WADCOs and VIDCOs were generally very weak poorly-functioning organisations that had no purpose beyond political representation. This was made worse by the fact that they had very limited financial resources and skills hence the WWMC gained prominence at ward level in the implementation of CAMPFIRE.

Incorporating CAMPFIRE into existing local government structures allowed the rapid development of the Programme. The chief drawback to the strategy is that it has allowed RDCs to maintain a controlling interest, rather than handing power to genuine community-based organisations.

The Botswana model of CBNRM places strong emphasis on local-level decision-making. Consequently, over 40 trusts have been formed by rural people wishing to manage their natural resources. It has been proposed that the success of CBOs in Botswana will depend on:

- how power is distributed amongst the stakeholders;
- whether the CBO can prevent powerful groups from appropriating resources;
- whether the CBO can distribute benefits equitably.

The organisation of CBNRM in Chobe Enclave, for example, appears to facilitate participation and accountability. However some serious problems have emerged. These include:

- There is no differentiation between the staff of the CECT and its Board of Trustees, meaning that there is no accountability or formal supervision of the staff. This has hindered effective management of the Trust.
- The level of attendance at VTC meetings is generally poor and some VTC members are not really sure of their roles.
- There are power struggles between VTCs and the village development committees (VDCs).

- There is little or no communication between elected representatives and the members of the village trusts.

These help to explain the lack of tangible benefits coming through at household and member level.

The first two phases of the LIRD in Zambia were characterised by overtly 'top-down' management, with very little involvement of rural people in the Lupande GMA. In the third phase of LIRD, one of the key objectives was to develop accountable, transparent, and democratic local organisations for the management of wildlife, land, and other natural resources. This was achieved by: developing VAG constitutions; formulating definitions for VAG membership; building annual and quarterly general meetings into VAG constitutions and having financial statements audited. In addition the VAG constitutions set out rules by which committee members were elected, their period of membership, electoral procedures, and the various roles of the VAG committee members.

The relative success of organisational development in the Lupande GMA latterly is due to the fact that VAGs are at the appropriate scale for forming effective CBOs. This means that the members of individual VAGs are known to each. In addition, it is possible for the entire VAG to meet "under a tree" to discuss local issues with respect to CBNRM.

Madikwe Game Reserve in South Africa does not represent a typical CBNRM programme or project; it is more like a 'parks and neighbours' programme. Madikwe is a three-way partnership between the South African Government (as represented by the National Parks Board), the private sector, and the local community. The Parks Board is the principal partner within the partnership. It provides the conservation infrastructure and ensures that the Game Reserve is managed in accordance with the objectives and policies outlined in the management plan. The private investors provide the project with its financial engine and without them it would not be able to meet its conservation and development objectives.

The community is currently considered the weakest link in the partnership. Its position has not been helped by the power struggle that has occurred between the three villages which form 'the community'. These differences need to be overcome in order for the collective goals of the Madikwe Game Reserve to be achieved. A capacity-building grant to the three beneficiary villages has raised two problems:

- Firstly, members of the community are asking what they will do with the training that they have received.
- Secondly, and possibly more importantly, surrounding villages have begun to question the exclusive rights of the three villages to the grant. This raises the larger question of the criteria (rules) used to decide that the three villages were to be the sole beneficial community.

In the examples from Zimbabwe and South Africa it can be argued that the definitions of community were effectively imposed 'from above'. Under CAMPFIRE, the existing political and developmental structure of the communal lands was used for the sake of convenience. In the case of Madikwe, it was decided that the three villages constituting 'the community' were to be the sole beneficiaries. Initially this approach allowed both CAMPFIRE and Madikwe to make rapid progress. Nevertheless, in Zimbabwe it now appears that CAMPFIRE has been largely appropriated (taken over) by the RDCs, while the sub-district units have not been wholly suitable for the management of natural resources.

There are also similarities between the Lupande GMA in Zambia and the Chobe Enclave Conservation Trust. In both cases, the CBOs have village-level roots. In Botswana these are through the village trust committees and in Zambia through the village action groups. In reality, however, there have emerged major practical differences in application. In Botswana it appears that elected representatives are hardly held accountable to their members, but in Zambia mechanisms were built into the VAG constitutions to ensure that there is regular feedback from the VAG committees to the VAG members. It would seem that these mechanisms have been effective, with projects being implemented and very little of the revenue being misallocated. More importantly however, the creation of strong institutional foundations resulted in major changes in the way that wildlife was perceived by the residents of Lupande GMA.

Within this context, the current organisational and institutional development taking place in Namibia appears to be relatively sound, with a strong chance of success. This is because the establishment of Namibian CBOs has largely been facilitated through a process of self-definition and negotiation with neighbours. Whilst this has been time-consuming and relatively expensive, it should result in significantly more powerful CBOs.



VAG constitutions set out rules by which committee members were elected.

Introduction

The major assumption in CBNRM is that natural resource management should be the responsibility of those living with, and using, the resources because they have a direct interest in the sustainability of the resources upon which they depend. Management of natural resources under private ownership has tended to be more effective than under state ownership in situations of open access where no one was accountable for the resource. Ideally CBNRM should be a more efficient management system than open access since communities become responsible for the resource. The challenge to be addressed for communities to be effective managers of natural resources is: "how do communities, (or how should communities), manage their resources?" This question forms the basis of Chapter 5 of this Manual. It is important for a natural resource manager to understand the bio-physical environment, i.e. a region's climate, geology, water resources, vegetation as well as the socio-economic environment in which resources are being managed.

The two agricultural sectors in southern Africa

Countries of the SADC region are described as 'developing' nations. This means that agriculture is of critical importance to their economies. The region has a dual agricultural sector from its colonial history. There are two types of agricultural sectors in the region. These are:

- 1.) The communal farming areas; where the greater percentage of the population stays. Most households are involved in cultivation of crops and livestock rearing. Households decide to engage in agriculture for food security and as a source of cash income. In many parts of southern Africa, wildlands are being cleared for cash crops such as cotton which rural people find to yield higher benefits than wildlife in the short term. Products harvested from the veld (food, medicines and building materials) make an important contribution to household income. In times of hardships due to biophysical factors (e.g. drought) or economic ones (e.g. unemployment) the importance of veld and non-timber forest products increases. Because of high population densities in many of the communal lands, there are instances of severe environmental degradation.
- 2.) The commercial farming sector has enjoyed a long history of heavy subsidies (grants) from previous governments across the region. In some cases this has led to serious overgrazing, bush encroachment, and decreasing productivity. Farmers have been able to diversify away from single-species livestock production systems to multi-species wildlife systems. This was as a realisation that the returns per unit of land were more for wildlife production compared to single livestock production

system. The advantage of multi-species wildlife-based systems is that they tend to be more viable at lower stocking rates. Therefore there is less impact on the rangeland than with single species production systems.

Why Land redistribution?

The disparity between these two systems has been a source of tension and a challenge to governments in the region on how to address the issue of land redistribution without severe economic implications and simply transferring the ecological and economic problems of the communal areas to the newly settled areas.

Land redistribution requires a substantial investment in human resources, research, and financial support for the new settlers. Importantly, the policy issues of land and natural resource tenure need to be addressed to allow new settlers to develop a high level of proprietorship over their land. Many of the ideas and land use systems currently being developed for the communal land conservancies can be appropriate to resettlement programmes.

Conservancies and nature-based tourism

In Namibia and Zimbabwe the creation of conservancies has resulted in a significant expansion of the area of wildlife habitat as this is a more viable land use option. Adopting wildlife as a land use, results in improved habitats and the maintenance of diverse healthy wildlife populations. In addition, the tourism and hospitality sector has created a significant number of new jobs and entrepreneurial opportunities.



Challenges associated with tourism and wildlife production

Tourism and wildlife as primary land uses have their own set of challenges. All forms of tourism are basically luxury products. In periods of economic hardship, expensive overseas holidays are the first expense to be cut. In addition, tourists are very sensitive to international issues such as terrorism and health warnings. As a consequence, land managers are potentially swapping the risks based on climatic variability for those relating to market variability. The evidence is, however, that in the long-term there is growing demand for wildlife- and nature-based tourism, which the region as a whole is well placed to exploit.

Principles of adaptive management

Adaptive management is a critical principle for natural resource management. Adaptive management provides a framework that allows the resource manager to deal with complex ecological systems for which there are constant changes hence making available information incomplete. The strength of adaptive management is that it establishes an experimental or scientific approach to resource management.

The key characteristics of adaptive management are:

1. **Testing assumptions:** adaptive management involves systematically trying different actions to achieve a desired outcome. This does not mean that it is simply a system of trial and error. It means methodically developing an objective and then implementing actions to achieve this objective. A crucial part of testing the assumptions is developing a monitoring system that collects the information

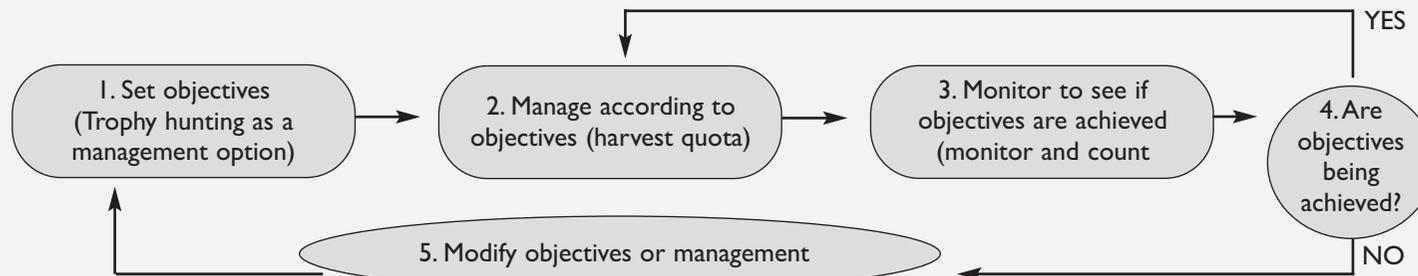
that is needed. For example a conservancy might agree that its objective is to increase the number and trophy quality of kudu. The action might be to reduce the quota for kudu for 5 years. The assumption that is being made is that by shooting fewer kudu, the number and trophy quality of male kudu will increase. A monitoring system to measure trophy quality and number of kudu is also required.

2. **Adaptation:** adaptive management is about taking action to improve subsequent actions. If an action does not have the expected results, then there are several explanations. These are that: the assumptions were wrong; the action was poorly implemented; the conditions have changed; or the information collected through the monitoring was incorrect. Generally, the natural resource manager would have some control over the last three and so would need to examine carefully the assumptions that the action was based upon. For example: if the conservancy found that after 5 years the number and size of the kudu had not increased, then there might be a problem with the assumption. The assumption underlying the action was that the low number of kudu and poor trophy quality was due to excessive hunting. A second assumption might then be made that a key nutrient shortage is the cause. The action to test this assumption would be then to provide the key nutrient (in the form of a food supplement) to the kudu population.
3. **Learning:** the whole process of adaptive management is about learning. An important part of learning is that the assumptions, the actions taken, and the results of the monitoring are documented. This is important so that future resource managers know what has been tried and tested. It will also allow other resource managers elsewhere to learn from another's experience without having to go through an entire process themselves. For example: in the conservancy, there might have been several changes of committee and game guards over an extended period. If the first committee did not leave some notes about its kudu management, then a new committee its technical advisors might be tempted to cut the quotas again in order to improve trophy quality and numbers, not knowing that it had already been tried and had failed.

Figure 3: Adaptive Management Process

WHAT ARE THE STEPS IN ADAPTIVE MANAGEMENT?

There are many different diagrams showing the steps in adaptive management. Here is a model of adaptive management that has 5 key steps:



It is important to recognise from Figure 3 that adaptive management is a cycle or a continuous process. Once started, it should be a never-ending activity, where the monitoring of key variables is critical.

Why is adaptive management an important principle for resource managers?

- **Complex systems:** natural resource management takes place in highly complex systems. These systems are influenced by geophysical, ecological, social, cultural, political and economic factors. Adaptive management is a systematic approach to solving problems, and can help the resource manager deal with the complexity that he/she faces.
- **Changing and complex systems:** natural resource management is taking place in highly complex systems. The process becomes even more complicated when these systems themselves are changing. The more complex changes that resource managers must deal with are those that are a result of social, political and economic change. These changes are not very predictable, can be very rapid, and might have an enormous influence on the way that natural resources are managed. In Southern Africa, very good examples are the massive changes that have resulted from Namibia becoming independent, and South Africa ending the system of apartheid.
- **Incomplete information:** Natural resource management takes place in a complex and often changing environment. Under these conditions, it is impossible to collect and analyse all the information that might influence a given situation. Adaptive management is a process that helps to overcome this lack of knowledge by making assumptions, taking action, and then monitoring the results.
- **Technological change:** technological change is a major factor affecting the way natural resources are used. Improved technology can assist the resource manager in their process of adaptive management.



Improved technology helps the resource manager in various important tasks

Key steps in the adaptive management cycle

Step 1: setting objectives

Setting the objectives depends on many factors including the tenure system and the circumstances of the adaptive management process. In state and private land there might be some consultations with limited stakeholders. For a community-based organisation (CBO), setting the objectives will be a process that needs to consider the views of all the stakeholders who are involved.

When dealing with NRM issues, it is often necessary to collect information about an area. The starting point of data collection is usually ecological, and refers to the status (species, abundance etc.) of natural resources in the area. Where it is appropriate, information on social (leadership, organisation, culture etc.) and economic (household income, major economic activities) variables should also be collected. There are two approaches to collecting the information. The detailed, scientific approach can be time-consuming and requires substantial skills and resources. An alternative method is to collate all the available information and then add local knowledge to it. This second approach can use participatory techniques and is highly appropriate for community-based work.

The context or the scale of the objectives is also important. Some objectives might have a very significant impact on the whole community, for example deciding upon land use zones. In other circumstances the objectives may be set by a much smaller group of persons who have the community's mandate (permission) to undertake such a decision. For example, the community game guards and their technical advisors could set the objectives of a patrol system.

Step 2: managing according to the objectives

The second step of the adaptive management cycle concerns the choice of management activities. about it involves deciding how the objectives (step 1) are going to be achieved. There are many ways to achieve the selected objectives in a complex ecological, economic and social systems. This raises aspect of what degree of management is required:

- There are three options with respect to the degree of management. These are:
 - a) to do nothing or
 - b) to stop those activities that have a negative impact on the environment (passive management) or
 - c) to engage in activities that enhance the quality of the environment (active management)

Active management implies that the land and resource managers are investing skilled time and money in improving the resource base. A second set of issues then arises from the concept of active management. These are:

- **Natural resource harvesting:** some of the most important choices that natural resource managers need to make involve the kinds of natural resources that they are trying to manage, and the levels of their use. Many of the CBNRM programmes in Southern Africa are focussed on trophy hunting of large mammals. Others involve the harvest of fish and non-timber forest products. There are many mechanisms for limiting the harvest of natural resources, these include: quotas, limits on technology, limits on when and where resources can be harvested etc.
- One management option that does sometimes have to be considered is the **rehabilitation of the resource base**. Rehabilitation covers activities such as the re-introduction of wildlife or fish, vegetation management, and infrastructural work to control soil erosion etc. Rehabilitation activities are by nature very expensive, and the manager must ensure that they are cost-effective. With adaptive management any kind of rehabilitation carried out, has to be monitored to allow the results to be evaluated, compared with the objective, and if justified repeated or terminated as appropriate.
- **Vegetation management:** natural vegetation provides the food and habitat for wildlife and domestic production systems. It also protects the soil from erosion by preventing excessive run-off. Vegetation management through the manipulation of stocking rates, the careful selection of species stocked, and the strategic use of fire, are all appropriate management tools. The crucial issue is to address the problem in the context of an adaptive management cycle and rigorously monitor the results of the intervention.

Step 3: monitoring

Monitoring is an essential step of the adaptive management cycle. If omitted or poorly implemented, the cycle will break down and there will be no way of assessing progress towards the objectives that have been set. Natural resource monitoring has tended to be done by scientists but to be effective, monitoring should be an integral part of management, and must be done by resource managers. There are a number of criteria that should guide monitoring, these are:

- 1) For each data collection activity there should be a direct link with a management decision; how the data will be collected, analysed and used can then be identified clearly.
- 2) Monitoring can be time-consuming and expensive. Selection of variables (aspects to be monitored) must be made with respect to the current and future revenue that can be earned from the resource.
- 3) In many situations the information that is needed does not involve precise estimates of numbers. For effective adaptive management, information on trends is normally sufficient.
- 4) The collection of information should not depend on external support. This support could be financial, logistical (transport, computers) or in the form of skills. Wherever possible data should be collected by the community management unit, instead.
- 5) It is essential that the information be accurate and robust enough to ensure that the management unit can determine whether progress is being made towards the objectives. There should be complete openness about the system, its advantages and its disadvantages.

Step 4: evaluation of progress

The evaluation of progress should be undertaken regularly. It is common for large quantities of biological information to be collected that are never analysed and evaluated. This will break the link in the adaptive management cycle. During evaluation it is important that causality between the variables is established. Causality simply means that the changes in one variable factor are a product of changes in another variable factor. Finally, it is critical that the results are recorded in an accessible manner and safely stored for future reference.

Step 5: modifying the objectives if necessary

In natural resource management, returning to the objectives should only happen very infrequently. This is because the objectives comprise a 'collective vision' that has been created by multiple stakeholders. The collective vision should therefore be robust and be appropriate in the long-term. What can be changed in the short- to medium- term are the management activities that are designed to achieve the objectives. If results of the monitoring and evaluation of progress show that the objectives are not being achieved, then the management options that are being used must be changed ? otherwise the process of adaptive management breaks down.

Some simple principles of adaptive management

- Adaptive management should not be imposed on organisations by 'outsiders'. If it is, it will probably fail to be adopted.
- Adaptive management needs an environment in which people are willing to experiment. This means that new ideas should be encouraged and discussed.
- When new ideas are being tried and tested, failures should not be considered a disaster.
- If organisations are to manage natural resources using the principle of adaptive management then they need to have skilled and confident personnel in key positions.
- Adaptive management has been discussed with a strong emphasis on natural resource management. However, the principles are easily transferred to other management process, e.g. financial management by a community.

Practical tools for planning and monitoring natural resource management in CBOs

The active management of resources by communities requires that CBOs/conservancies have the tools to manage their natural resources and the tools to monitor their progress towards their objectives. A number of tools and activities have been developed across the region that assist CBOs with their planning process.

These are:

1. **Maps and mapping:** initially, all existing maps of the area are collected and, where necessary, digitised so that they can be used in a Geographical Information System (GIS). Facilitators then assist the community in collecting information that is missing. Community drawn maps can also be used to incorporate indigenous knowledge. The printed maps are distributed to the CBO to assist with the boundary negotiations and land-use planning.
2. **Resource inventories:** a resource inventory is an important part of the baseline information that the CBO compiles. This contains information on: birds, mammals, vegetation, water, forestry, fresh water fisheries and veld products within the community area.
3. **Management plans:** the maps, together with the resource inventories, are the basis for the management plan. A number of different types of management plan have been developed regionally for use by CBOs/conservancies.

How are communities monitoring their natural resources?

If communities adopt adaptive management as their guiding principle, then the development of the management plan fulfils Steps 1 and 2 'Setting the objectives' and 'Managing according to the objectives'. Steps 3 and 4 of the process are 'Monitoring' and 'Evaluation of progress'. Communities therefore need to:

- a) assess what needs to be monitored;
- b) develop monitoring systems;
- c) receive the necessary training for conservancy staff and representatives;
- d) conduct an annual review or audit.

Because of the special needs of communities, many conventional monitoring techniques developed for wildlife and natural resource management have to be adapted for their use. Tools have been designed regionally to monitor:

- rainfall, fire and floods;
- problem animals, including predators;
- rangeland and livestock condition;
- poaching and stock theft;
- animal abundance and distribution;

Off-take quotas for maintaining sustainability

Quotas are a control mechanism for ensuring limited harvests and protecting the sustainable use of natural resources. Other mechanisms for ensuring that harvests are sustainable include: restrictions on technology (e.g. net sizes or net length); limits on the period (certain days in a month, or months in a year) when harvesting can take place; or limits on where harvesting can take place (e.g. not within core areas or national parks).

Quotas are often used because they are convenient and easy for bureaucrats to set and monitor. Quotas are most frequently used in the wildlife and timber sectors. (For more information on this topic and the following one, please see the Quota Setting Manual in this WWF Wildlife Management Series.)

Estimating the abundance of natural resources

The commercial uses of natural resources are largely the driving force behind CBNRM as they generate the financial benefits that serve as the incentives for management. An essential principle of CBNRM is that the use of natural resources, especially the commercial use, is sustainable. Using the principles of adaptive management, methods are needed that estimate the impact of the any off-takes on the resource(s). The following section is biased towards estimating wildlife populations because wildlife is the basis of many regional CBNRM programmes, and is also the most difficult resource to estimate

It is difficult to estimate wildlife numbers because:

- a) the animals are wild and cannot be herded and counted as if they were domestic animals;
- b) the animals are generally well camouflaged and are not easy to see ;
- c) some species are dangerous – it is not advisable to get close to them;
- d) some species occur in large herds, which makes it very difficult to estimate numbers.

It is difficult to estimate the abundance of forest products (timber), non-timber forest (NTF) products and veld products because:

- a) the areas over which these species occur are sometimes very large;
- b) these areas are not only large but they are also diverse which makes estimates from sample surveys difficult to calculate;
- c) the abundance of NTF and veld products is dependent on complex ecological relationships between factors such as rainfall, temperature, etc.

There are three approaches to estimating the abundance of wildlife. These are:

1. **Total counts.** A total count aims to count all the animals of a particular species in a specific area. Because of the problems associated with counting animals, total counts should only be used when:
 - The wildlife area is relatively small (less than 10km²) and is completely fenced so that no animals can enter or leave.
 - A single, high value species is being counted in a very restricted and defined area. For example, it might be possible to conduct a total count of black rhino because it is a highly visible animal in a defined area. The accuracy of the total count will be improved further if individual animals are easily identified.

In general, and especially in most CBNRM situations, total counts are not appropriate.

2. **Sample counts.** A sample count aims to estimate the abundance of animals in the census unit from the number counted in smaller units, the 'sample units'. Sample counts make two important assumptions:
 - All the animals in the sample unit have been seen and have been counted.
 - That the animals are spread evenly throughout the census unit for which the population is being estimated.

It is highly unlikely that all the animals in the sample area will be seen and counted. Secondly, wild animals are never evenly distributed throughout a large wildlife area. They will tend to congregate in areas of favourable habitat and where there is water. The difference between these assumptions and the realities of the census area need to be taken into account when sample surveys are being planned.

- 3. Index methods:** An index method aims to produce an indirect estimate of the status of a population in a given area. An index of abundance will only be valid if the method used is consistent over time. There are several different types of indices that are commonly used in wildlife management, these are:
- An index of abundance: gives an indication of the status of the animal population based on the number of animals seen per unit of time or per unit of distance. To begin to provide information that is useful for management, the index must be measured over several seasons so that a trend, if it exists, can be detected.
 - An index of trophy quality: gives an indication of the status of the animal population based on the average trophy size. To begin to provide information that is useful for management, the index must be measured over several hunting seasons so that a trend, if it exists, can be identified.
 - Other methods: other specialised index methods can be used to provide indices of population abundance. These include: spoor abundance, dung densities, and 'mark, release and capture'. These should be considered as specialised methods that are used under specific circumstances.

The advantage of index methods is that they are relatively cheap and simple to implement in a CBNRM context.

It is important that natural resource managers are aware of the options that exist for estimating the abundance of wildlife populations. The choice of what category of method to use (i.e. total, sample or index) will depend on many factors. It will include the financial and human resources that are available, and the reason for needing to know the species abundance. In natural resource management the best strategy is to collect information on a species from different sources. Decisions can then be made based on the evidence from all the sources (this is a process known as triangulation).

Human-wildlife conflict

Wildlife is the focus of regional CBNRM programmes for many reasons. One of these is that wildlife is often a more appropriate form of land use in semi-arid and arid African environments. However, wildlife is also unique because it is a resource that moves about, and certain species are dangerous for people to live with. As a result, there is often conflict between people and wildlife. Managing human-wildlife conflicts has become an important aspect of nearly all wildlife-based CBNRM programmes in Southern Africa. It is important to remember that human-wildlife conflict is not

restricted to large mammals such as elephant, hippo and the carnivores. Birds, insects and small mammals are all capable of causing large-scale destruction of crops and therefore threatening people's livelihoods, even where there are no large mammals. (For more information on problem animals, please see the WWF Problem Animal Reporting Manual in this Wildlife Management Series.)

Human-wildlife conflict (HWC) is a two-way process concerned with the interaction of wildlife with people. HWC is most commonly associated with crop damage and the loss of livestock to predators. There are other social and cultural problems created by the interaction of people and wildlife, as well. There can be negative effects from people on the environment as a result of the problems caused by HWC. This might range from the elimination of certain species to the deliberate destruction of habitat in order to remove the conflict.



Smaller animals are capable of causing substantial damage to crops.

The costs of human-wildlife conflict

The direct costs of HWC:

- the damage to food crops being grown for own consumption rather than sale (e.g. maize, millet, fruit and vegetables);
- the damage to cash crops resulting in a reduction of household income (e.g. cotton, tobacco, fruits and vegetables);
- the damage to water storage, water reticulation, and pumping equipment (reservoirs, pipes and pumps);

- the loss and damage to food stores (grain and other dried products);
- the loss of livestock, or their injury;
- the investments in tools/equipment/infrastructure to reduce the impact of HWC;
- human injuries and death.

The indirect costs of HWC:

- the restrictions on people's movements, especially at night;
- the restrictions on people's access to water and non-timber forest products;
- the opportunity costs (too tired to work in the fields by day) incurred through guarding crops at night and the increased risks of contracting diseases such as malaria;
- living with the constant fear of the potential harm that can be caused by wild animals;
- the transmission of disease from wildlife to livestock;
- the competition between livestock and wildlife for grazing and water.

Institutional change and the costs of living with wildlife

We have already looked at the potential for institutional change in terms of the costs and benefits of the old and the new management systems. One of the disadvantages of new management could be an increase in the direct and indirect costs of human-wildlife conflict. This would certainly be expected if one of the objectives of the new management system was an increase in wildlife numbers, especially those that cause the most problems, e.g. elephant. To create favourable conditions for institutional change, (i.e. where the benefits substantially outweigh the costs), HWC has to be dealt with. The other side of the equation is also important? the people living with wildlife must receive direct benefits. People expect that the formation of a conservancy or other CBO will address their human-wildlife conflicts. This can put financial pressure on new organisations to invest in people and equipment to manage HWC as a priority issue.

There are often serious differences in opinion on the importance of HWC. One reason for this is the different ways of measuring the impact of wildlife on people, their crops and livestock. One way to assess levels of HWC is through crop and livestock losses. Another way is to determine which species are the greatest threat to humans and their livestock.

- Greatest damage to crops: smaller animals that are not dangerous to humans are the greatest agricultural pests. In Africa these include: rodents, birds (especially seed-eating birds like quelea, and fruit-eating birds); pigs, primates, small carnivores (eg. genets, serval cats, mongooses); and some antelope (eg. duiker, bushbuck, kudu).
- Greatest threat to people: what understandably concerns people most about HWC are the larger species of African wildlife that are potentially dangerous to people and livestock. The most common of these can be either herbivores (elephant, buffalo and hippopotamus) or carnivores (lion, hyaena and crocodile), as well as venomous snakes. See HWC Manual in this series for more information.

Why is information so important in reducing HWC?

In the absence of good information, the threat of problem animals can only be judged by personal opinion and anecdotes. One important reason to collect data on nuisance animals systematically is to put the problems and threats they cause into perspective with the many other problems of survival faced by rural people in Africa. In order to make informed and cost-effective management decisions, data on problem animals needs to be:

- a) current
- b) reliable
- c) sufficient

Initial information can come from several sources: from affected people themselves; local leaders or community representatives; from other wildlife managers, researchers or technical experts; or even from a written report or via the media. Information that can be used to make decisions on how to reduce human-wildlife conflicts needs to be rigorous (accurate and thorough), it should include: who suffered the damage; what

was damaged; where the incident occurred; when the incident occurred; what animals were responsible and how bad the damage was. Because of the volume of data involved in many widely-spread incidents and the need to measure how serious they are, it is best to have a trained person (an 'enumerator') to record the facts each time and verify what actually happened. If all incidents are treated in this same fair and objective manner, the information gained is reliable.

To collect information that can be used to take the necessary action to reduce human-wildlife conflict, experience has shown that the following are necessary:

- All the stakeholders involved must agree on the information that needs to be collected, how it is going to be collected, by whom, and how frequently.
- Information on problem animals (PAR) is usually improved if a local supervisor administers it. The supervisor should standardise the quality of the information that is being collected.
- Enumerators: need to be recruited and trained to collect the information.
- One feature of HWC is that it can be highly localised. It is important that the area over which the problems exist is adequately covered.
- Feedback: the collection of detailed information from affected farmers raises their expectations that measures will be taken to reduce the conflict. It is essential that there is open and regular interaction between the affected farmers and those who are collecting, analysing and using the information.

In CBNRM programmes regionally, most of the HWC complaints relate to large herbivores. Although overall these species might do less damage than smaller animals, they do have the potential to damage a high proportion of a crop in a short time. For communal land farmers in semi-arid regions facing poor yields, the damage that a herd of elephants can cause might make an enormous difference to the total harvestable crop.

Problem animal management

Considerable experience has been gained with different problem animal management schemes (PAMs) in Southern Africa over the last 15 years. These options, and the lessons learned, include:

1. **Disturbance methods:** methods that are aimed at scaring away problem animals. A common method is to shoot in the air with a firearm. Other methods involve using thunder-flashes, drums, whips etc. to make a noise. However, some animals learn there is no real threat to them and return. Consequently, disturbance methods can be used most effectively when the incidences of problem animals are not too numerous.
2. **Problem animal control (PAC)** differs from the disturbance method because it usually refers to killing one or more of the animals that are causing the problem. It can be an effective method when there is one identified carnivore that is acting abnormally – it might be an old, wounded lion, for example. In these cases killing the right animal is an appropriate solution. If trained people carry out PAC, it is done quickly and kills the correct individual, then it can then be a cost-effective method. This is because the number and density of carnivores tends to be lower than for herbivores such as elephant. An alternative to killing the offending animal is for it to be captured and moved. This is, however, an expensive option.

Although communities are often satisfied with PAC, especially if there is meat available as a consequence of the killing, it is not a long-term deterrent when it comes to problem herbivores and therefore it does not solve the problem in this instance. It is also often very difficult to identify the individual animals concerned. Finally, killing animals by PAC does not maximise the value of the animal

3. **Electric fencing projects:** improvements in technology (e.g. solar panels) allow electric fences to be built relatively cheaply in remote locations. The benefit of electric fencing was supposed to be that it would be cheaper to build and maintain than conventional fencing (as it was assumed that the fence itself would not have to be as robust as non-electric ones, where the fence itself provided the physical barrier). In practice, electric fences have not been as effective as promised. In Zimbabwe a study of 21 community-managed electric fences showed that 20 were not working as planned (Hoare and Booth, 1999).

4. Compensation schemes, in which farmers receive cash payments for the losses caused by large herbivores, have been tried extensively. They have generally been unsuccessful because:

- the cause of the problem is not being dealt with; compensation only addresses the problem symptoms (crop damage);
- they are expensive to administer – to avoid false and inaccurate claims, assessors need to be trained and have to travel to the affected sites;
- they can, in some instances, reduce the incentives for farmers to defend their crops;
- they do not deal with the indirect costs of living with wildlife;

Compensation schemes for livestock loss through carnivores can, however, be effective. This is because

- The overall financial costs of livestock compensation are generally lower than with crop compensation, which means that it is possible for the scheme to be viable within a conservancy.
- Greater conditions can be attached to the payment of compensation, for example compensation is only paid if the animals were kraaled at night and the incident is reported within a given period.
- The definition of payments is easier than with crop damage. For example it is possible to agree a schedule of payments by species, age and sex of the domestic animal lost to a predator.

What simple options exist for addressing HWC?

The options that have been discussed above are largely dependent on external support to reduce the HWC. There is growing evidence that one of the most appropriate solutions to HWC, especially that caused by large herbivores, is to empower farmers to deal with the problem themselves. This approach is based on two assumptions:

- With the implementation of CBNRM programmes, some control has been returned to the farmer. This is an opportunity to create a situation in which farmers take the initiative and deal with as much of the problem as possible themselves.
- Many communal land farmers have experience in dealing with HWC and have their own methods to reduce the impact of HWC. The assumption is that these methods should be expanded to allow farmers to deal effectively with the problem themselves.

The methods that have been developed to allow farmers to deal more effectively with HWC are:

- Farm-level crop planning:** it has been shown that if farmers plan the layout of their crops in a certain way, then this can reduce the damage caused by HWC. This approach suggests that farmers should plant crops that are unpalatable (not tasty) at the edge of their fields (e.g. cotton or chilli peppers, for which there is a growing world market).



Elephant find capsicum (chilli) plants highly unpalatable!

2. **Homemade fencing:** homemade fences have never been an effective physical barrier against the larger herbivores. Now, developments suggest that a mixture of capsicum oil (an extremely hot spice) and grease on a rope can provide a very good deterrent mechanism. Similarly, if traditional cow bells are hung on a fence then their noise will alert the farmer (or groups of farmers) that animals are entering the field. This allows the farmer to employ other deterrent mechanisms before too much damage is inflicted.
3. **Homemade deterrents:** communal farmers already have a range of non-lethal deterrents that they can use. Research suggests that these can be useful in chasing animals out of a field. One example is traditional livestock whips that can be used to simulate the noise of gunshots.
4. **Co-operation between farmers:** if communities develop methods of communication it allows for much greater co-operation between individual farmers. This means that crop-raiding animals meet the co-ordinated efforts of a community, including all the measures mentioned above. It also means that they cannot move out of one field to find sanctuary in the next. This will both reduce the damage inflicted to crops and livestock and also deter animals from crop raiding.
5. **Institutional change and HWC:** dealing with HWC is a very important component of institutional change. Empowerment to deal with wildlife means that farmers must have the tools and the legal authority to deal with animals that cause them problems. Farmers often resist simple low-cost methods for dealing with HWC such as those listed above because they still consider HWC to be a government responsibility. This means that regional governments should not continue to carry out HWC activities when they are implementing CBNRM programmes. If they do, it will send conflicting messages to the farmers and it is unlikely that the broader resource management objectives will be fulfilled. Farmers should also have the option of receiving direct benefits. This means that they will be able to compare the losses that they have suffered from HWC with some tangible, cash benefits from wildlife. The goal over time would be to ensure that the benefits received substantially exceed all the costs of living with wildlife.

Is managing human-wildlife conflict adaptive management

A HWC situation does not have to be managed using the principles of adaptive management. However it is likely that if adaptive management is used to find a solution to a human-wildlife conflict it will generally be more successful and more cost-effective than other strategies.

Table 3: Applying adaptive management principles to a HWC situation.

Steps in adaptive management	Action
1. Setting objectives	Collect reliable information to establish a baseline on the HWC in a defined area. Using the information, together with existing technical information, to develop a 'model' of the HWC. Using the model, develop management option(s) that will reduce the HWC to an acceptable level (remember it is not possible to eliminate HWC completely).
2. Managing according to the objectives	Implement the chosen management options.
3. Monitoring	Set up a data collection system that will produce reliable information on the effectiveness of the chosen management option.
4. Evaluation	Evaluate the results of the monitoring and compare them with the objectives set out in step 1. If the HWC has not been reduced, then go to step 5. If the HWC has been reduced to the levels agreed in step 1 then continue with management option.
5. Iteration	Return to step 1 and re-consider objectives to reduce HWC. Before changing the management option the following questions must be asked: <ul style="list-style-type: none"> - were the assumptions about HWC incorrect? - was the model that was developed inappropriate? - was the management option correctly implemented? - have the conditions changed and therefore the model that was developed is now wrong? - was the monitoring producing accurate and reliable information for use in the evaluation?

Law enforcement and the illegal use of wildlife

The origins of the 'illegal' use of wildlife in the region are in the original policies and legislation introduced in the early 1900s in South Africa. Subsequent legislation adopted throughout Southern Africa alienated farmers (commercial and communal) from their natural resources, i.e. farmers' access to, and use of, wildlife was restricted. In general, farmers had user rights over all other natural resources, although commercial forms of utilisation were illegal. Generally, four types of illegal use of wildlife are recognised. These are:

1. **Subsistence gathering:** the collection of animals for consumption/use in the home. There is seldom any surplus.
2. **Subsistence hunting** defines activities that are carried out with simple technology/weapons (dogs, snares, traditional weapons). The meat is used in the home or distributed between several households. The impact on wildlife is generally very low, while the contribution to the household economy can be quite high.
3. **Commercial hunting** for meat: targets large herbivores such as buffalo. In some situations, generally associated with a complete breakdown in law enforcement, commercial meat hunting can develop into a major economic activity. Commercial hunting for meat can have a substantial negative impact on wildlife populations.
4. **Commercial hunting for animal products** (specific parts such as horn or ivory) is the most common image of the illegal use of wildlife. For the target species, it can cause a significant reduction in population numbers and in some cases has led to localised extinction. This form of illegal use of wildlife is characterised by: a relatively high level of organisation in its implementation, for example the use of carriers to remove products, and links with organised markets not only locally but also internationally

Animal products, unlike perishable meat, are durable and can be stored in quite basic conditions until it is 'safe' for them to be moved. The products are also high value and low bulk. This means that they can be moved cost-effectively even in small amounts a single rhino horn for example.

An important factor that affects the level of illegal use of wildlife is the current economic situation. It is important to consider this at the local, national and even regional level. The illegal use of wildlife, either for meat or for products, is affected by the availability of alternative sources of income. People will not take unnecessary risks

and break laws if they have viable alternative sources of income. At the local level, this will be affected by the availability of land for farming, the success of past seasons, and the opportunities for formal and informal work. Similarly, at the national and regional levels people will prefer other economic opportunities to taking the risks associated with the illegal killing of wildlife.

What are the elements of effective law enforcement?

- Any person engaging in an illegal activity will first assess the risk or the probability of being detected and then apprehended (caught).
- As well as assessing the risk of apprehension, a person about to engage in an illegal activity will also consider the nature of the punishment. The nature of the punishment will modify the initial assessment of the risk of apprehension; if there is likely to be a severe punishment, for example a high fine and/or a jail sentence, then it is more likely that this will act as a deterrent.

Apprehension is normally the function of the wildlife agency staff. All the subsequent processes through to final prosecution/conviction/sentencing are normally the responsibility of the judiciary (police, government prosecutors and the courts). An effective law enforcement system therefore requires co-operation between those who are responsible for detecting/catching wrong-doers and the judiciary.

An effective system also requires a sense of shared values. Stock theft is traditionally viewed as a very serious crime and in some countries carries a mandatory jail sentence. Poaching on the other hand, especially of smaller ungulates, generally warrants only a fine. Since wildlife is a legitimate, and in some areas much more profitable, land use system than livestock farming, this should be reflected in comparable punishments for similar crimes.

Do CBNRM programmes need law enforcement?

There is very little basic research, monitoring, and evaluation on the impact of CBNRM on the illegal use of wildlife. However, 'law enforcement' relating to the use of all natural resources, (and collective compliance with its rules and regulations), is fundamental to the establishment of common property management. Several the 'design principles' we have already looked at deal directly with systems of establishing, monitoring and enforcing local rules. These are:

1. Clear and defined boundaries: without defining the boundaries and the users of the resource, it is very difficult to prevent 'outsiders' from exploiting the resource and maintaining a system of open access.
2. Development of local rules: ecological sustainability will only be achieved if the various rules governing how the resource is harvested are well developed. If these rules are locally developed, they are usually much more effective as they will take into account local variations in the natural resource base.
3. Monitors and the monitoring system: the monitors who keep a check on the resource (and the behaviour of the users) must be accountable to the users, (the monitors are often in fact the users of the resource themselves).. Monitoring systems that are too complex or too costly will not be viable.
4. Graduated penalties: users who break the rules will receive a graduated penalty. The penalty will depend on the seriousness of the offence and how many previous offences have been committed. Importantly, the penalties should be locally administered. Experience from functioning common property systems shows that the use of formal penalties (fines, imprisonment) is generally quite limited and that compliance with the local rules and regulations is largely as a result of social pressure. This is an important concept, as it will influence the design of the monitoring system.

Community monitoring of natural resources

CBNRM in Southern Africa contains an unwritten assumption that through the receipt of collective benefits, activities that will be detrimental to natural resources (including the illegal harvesting of wildlife) will be reduced through social pressure within a community (see above). It is however a common feature of most CBNRM programmes that communities employ 'game scouts', 'game guards', or 'resource monitors'. The term 'game scouts' implies functions and roles very similar to those of state wildlife agencies, while 'resource monitors' implies a more passive role. The tasks assigned to these employees of the community include:

- patrolling to report and/or apprehend those breaking national and local community rules;
- monitoring resource abundance;
- recording problem animal damage and implementing measures to reduce the damage by such animals.

In some regional programmes, considerable confusion remains over the exact role and responsibilities of the communities' monitors. In Namibia, community game guards have been prevented from accompanying hunters for example, whilst in Zambia, community-based scouts can only patrol when accompanied by scouts from ZAWA. In Zimbabwe, the state management agency has withdrawn its staff completely from the communal lands. This effectively handed all responsibility for wildlife monitoring and protection to CAMPFIRE without any assessment of the risks or threats this would involve. While community employees might be able to deal with local subsistence hunting issues, it is only under exceptional circumstances that they can address highly organised illegal hunting for commercial meat and wildlife products without government support. Despite this uncertainty, there has been considerable investment by donors in training community scouts.

Market-based solutions to illegal wildlife trade

International trade and globalisation have had both positive and negative effects for CBNRM. The positive side is that international tourism has developed in parallel with globalisation. This has created a demand for nature-based tourism in Southern Africa and is a source of income for many CBNRM programmes. The negative aspect is that demand for natural resources in one region of the world can now have a rapid and direct impact on natural resources in another.

Trade in natural resources is controlled through CITES. CITES evolved in response to the negative effects of international trade on natural resources (see Chapter 3). In Southern Africa, the two species that are at particular risk are black rhino and African elephant. For black rhino in particular, the CITES listing has been particularly ineffective in practical terms and there have been strong calls for other mechanisms to be tried. The one obvious solution to the illegal trade in both rhino horn and ivory is to consider market-based solutions. There are two assumptions that underpin the concept of market-based solutions to the illegal killing of rhino and elephants. These are:

- the poachers are rational people who are understand the relationship between risk and return;
- there will always be a demand for rhino horn and ivory, particularly amongst Arab and Far East nations.

The price of horn or ivory at each stage of the marketing chain is the incentive for a person or group of persons to engage in illegal activity. Simple economics shows that if the supply of a product is increased then the price will fall, and that if the overall demand for a product is decreased, then the price will also fall. (Note the reverse of both is also true.) The alternative long-term strategy for law enforcement is therefore to address the price of the product, with the aim of reducing the market price to such a point that there are no longer incentives to poach. The implementation of this approach would differ for rhino and elephant.

- Currently black rhino are generally classified as a specially protected species in all countries except South Africa. In the CBNRM context, farming rhino in order to remove their horn (which is matted hair and will therefore re-grow) would give communities an added source of income as they could harvest their black rhino horn. This would raise the net incentive to actively manage wildlife and maintain wildlife as a primary land use. An interim measure, between granting rights to harvest rhino horn and full production, would be the controlled release of rhino horn stocks onto the world market.
- The CITES ban on the international trade in elephant ivory has resulted in a reduced demand for ivory worldwide. This has been due to the effectiveness of campaigns against the use of ivory in western economies. There is still a high (and

rising) demand for ivory in the Far East, however. Intensive and semi-intensive production of ivory is not an option since an animal must be killed to remove its tusks. However, there are huge stockpiles of ivory that could be released onto the markets in the medium-term. There are also currently populations of elephant in the region that are in need of reduction. These two operations would provide sufficient ivory to increase supply and therefore decrease the market price. As with rhino, the objective would be to reduce to the price to a point where poaching is no longer a viable option.

In the short-term, there would be a critical period in which law enforcement would be extremely important to ensure that there was no opportunistic exploitation of the change in legislation. In the long-term however, it would be envisaged that the price would have dropped and could be maintained at a level that would make the illegal harvest of these species unattractive.

Another assumption of the market-based solution to the illegal use of wildlife is that the countries in which this is implemented are functional and not corrupt. Where the law enforcement agencies, the judiciary and even the wildlife management agencies have been tainted with corruption then this would be a highly risky strategy.



Farming black rhino and periodically removing the horns from sedated adults would provide an income-generating opportunity whilst reducing incentives to poach by lowering the price of the wildlife product.

Introduction

We have already seen that the economic condition necessary for institutional change to occur is that the net benefits of the new system must significantly outweigh the net benefits of the old system. If this condition is not satisfied then institutional change is most unlikely to take place. Conservancies and CBOs will not be sustainable if they fail to improve the quality of life for the majority of people within the community compared with their situation previously. They also have responsibilities with respect to natural resource management and to the social and economic development of their members. Fulfilling these responsibilities requires financial resources, i.e. money. This chapter considers some of the important financial and economic issues involved in CBNRM.

What role can tourism play in the region's economic development

Southern Africa is a destination for regional and international tourists because of:

- its unique and diverse ecological systems, its size and generally low population density, which give tourists a sense of wilderness;
- its ethnic diversity, not only amongst its indigenous people but also as a result of its colonial history.

The development of tourism presents the regional governments with some very interesting possibilities in terms of the problems faced by their economies. These are:

1. **Employment:** tourism is a labour intensive sector that offers some solutions to the unemployment problem that countries in the region are facing. Unlike agricultural work and self-employment in the rural areas, tourism jobs require skilled persons and pay higher wages. Tourism also generates opportunities for entrepreneurs and communities to become directly involved in the tourism sector as owners and operators of camps, lodges and hotels.
2. **Wealth distribution:** some of the most desirable tourism locations in Southern Africa are in the least developed and poorest areas of the region (for example the Caprivi region in Namibia). Tourism in these regions offers options for economic diversification, employment, partnerships, and possibly ownership, to the poorest sectors of society.

Sources of income for conservancies and other community-based organisations

The following section will consider some the options that conservancies and other community-based organisations (CBOs) can use to generate revenue. This revenue is needed to:

- pay for management costs;
- provide either collective or individual benefits for their members.

Within the CBNRM programmes of Southern Africa, international trophy hunting usually accounts for most of the revenue that has been earned. Nevertheless, in 2002, 28% of the revenue attributable to CBNRM and conservancies in Namibia was earned by other community-based tourism (CBT) enterprises including: campsites run and managed by conservancies, campsites run and managed by other community-based organisations (CBOs), craft enterprises, and cultural villages and guided tours run by communities.

Because of Namibia's extensive experience with a broader range of CBT enterprises, some important general lessons have been learned. These are:

- The development of a CBT enterprise needs to be planned at several levels.
 - Firstly, it should fit in with the overall tourism plan for the area.
 - Secondly, the viability of the enterprise must be considered before any development takes place (see Chapter 4).
 - Finally, it is important that the infrastructure is carefully planned and developed.
- As part of the business development process, it is important that the appropriate management structures are put in place.
 - It is important that the management structure is developed to give the CBT enterprise an entrepreneurial (business-like) approach.
 - Where possible, there should be formal agreements between the management and the community.
 - Finally, it is important that the management team are given the appropriate skills to run the enterprise as planned.

- To become operational, a CBT enterprise needs management systems. The most important systems are those that cover financial management and administration of the enterprise and staff. CBT enterprises also need a booking system. In their early stages many CBT enterprises have been supported by local NGOs. For long-term viability, CBT enterprises generally need to be linked to a larger booking network.
- Marketing strategy: options that are being used are web-site links, brochures, and participation at trade fairs. One of the most effective marketing tools in tourism is to provide a quality product and experience to visitors (who will then visit again in the future themselves, as well as recommend the destination to others).
- A monitoring and evaluation (M & E) system for a CBT must be simple and effective, and must provide information that is useful to management. This information might include: the gross revenue per month, the number of visitors per month, monthly costs of running the enterprise, the length of time people stay etc. In an emerging sector like CBT, it is also useful if this information can be fed into a national system that can help monitor and evaluate the sector as a whole.

Joint venture trophy hunting

Trophy hunting (or safari hunting) is a leisure activity undertaken by a person? often whilst on holiday ? in order to kill animals for recreational purposes. Generally, the hunter wishes to shoot and kill only trophy animals. These are animals that carry good-sized horns (for antelope), large tusks (for elephant and hippo), or are large-bodied (for carnivores). Although trophy hunting is a global activity, Southern Africa has a unique diversity of large dangerous animals, which makes it a very attractive destination for all trophy hunters. Regional CBNRM programmes often advise CBOs to enter into a joint venture with a professional hunter.

Some important lessons have been learned about joint ventures for trophy hunting. These include:

- **Competition increases the value of the contract:** there is a demand from professional hunters and trophy-hunting companies for good quality hunting areas. This means that communities can maximise their revenue by creating competition between the people wanting to hunt in their conservancy. This can be achieved by tendering or auctioning the rights to hunt.



The hunter's aim is to bag a good-sized trophy

- **Contracts should be simple:** when communities sign a contract with a professional hunter they are entering into a legal agreement. The agreement generally specifies the obligations of each party and like all contracts these need to be closely monitored so that, in this case, the professional hunter abides by the rules and makes his/her payment correctly and on time. One simple option is for the professional hunter to pay for animals as and when they are shot. If this is method is combined with a minimum or guaranteed payment, it can be a very efficient and effective way for communities to earn money from their wildlife resources. One alternative that has been used very successfully in Zimbabwe is for the community to be paid a set proportion of the total revenue earned by a trophy-hunting company in its area.
- **Joint ventures can bring immediate and substantial benefits:** unlike tourism, trophy-hunting ventures do not require a substantial investment in physical infrastructure. This means that communities that have hunting rights can earn immediate and substantial revenue. The proportion of the gross revenue earned by communities from trophy hunting (32% to 51%) is substantially higher than from tourism joint ventures (5% to 10%).

- The currency of the contract: communities who are in joint ventures need to think about how their payments should be made: as local currency depreciates, communities that negotiated their contracts in, for example, US dollars can benefit from the exchange rate gains. This situation is reversed if and when the local currency appreciates, and then the advantage lies with the hunting operator.
- The quota is the most important management tool: the previous chapter dealt briefly with the biological aspect of setting quotas. Quotas were defined as a control mechanism for limiting harvests and ensuring the sustainable use of natural resources. When communities are engaged in joint ventures for trophy hunting it is important that they closely monitor the number of animals hunted against the quota that has been set. Animals that are only wounded should be considered as killed and should come off the quota and be paid for by the professional hunter. If the contract is structured using trophy fees, monitoring the quota is also a way of monitoring the contract.

Joint venture tourism

Joint ventures in tourism are very similar to arrangements that are used for trophy hunting, i.e. an entrepreneur enters into a contract with a community and brings capital and a set of skills to the partnership that are generally unavailable within the community. Communities are generally advised to consider joint ventures for tourism when they have sites of very high tourism potential. While CBT enterprises can generate small amounts of net cash revenue, successful tourism joint ventures can create substantial benefits for communities.

- Tourism joint ventures require negotiation: various methods for finding the “best private sector partner” have been tried in the tourism sector. Unless destinations and/or tourism sites are very well known, enterprises are normally the product of an entrepreneur’s ‘vision’. For this reason, it is now felt that the best option is a process of negotiation with potential investors.
- Contracts should be simple: because tourism is a more complex business than trophy hunting, involving many more clients and fixed investments over a longer period, tourism contracts tend to be more complex than those for trophy hunting. There are a number of important points about these contracts:

- a) Tourists visiting a lodge might make several different payments, i.e. for accommodation, food, guided activities etc. It is very important for both partners in the joint venture to clearly define what is meant by gross revenue.
- b) Once there is agreement on how gross revenue is defined, it is very important that both parties know how this is going to be checked. Compared with a hunting joint venture, it is much more difficult for the community to assess the numbers of clients and to know what each one paid. The most common means of verification is to use the audited accounts produced by an independent company.
- c) Some of the contracts that have been negotiated have a minimum guaranteed payment included in them. This means that if the enterprise does not perform as profitably as expected, the operator still has to make a minimum payment to the community. This reduces the risk to the community and allows them to budget with some degree of certainty.

In addition to the clauses dealing with payment, tourism joint venture contracts often deal with a range of other issues: recruiting local people to work in a lodge, providing training, and (where possible) using local materials for construction. The issue of ownership of the infrastructure must also be built into the contract. This means that communities who enter into these contracts often need considerable skills and training so that they can monitor the contracts.

- The benefits from tourism joint ventures: as we have seen, tourism is a very different business from trophy hunting this means that the revenue to the community is generally lower initially than the substantial and immediate returns from a trophy-hunting joint venture. It is important to stress however that for many communities there is seldom an opportunity to make a straightforward choice between a tourism joint venture and a hunting joint venture. In general, communities will develop those opportunities that already exist and will not be in a position to choose between them.

What other sources of income/benefit are available to a CBO?

There are five additional sources of income and benefits to conservancies/CBOs:

- 1) the interest earned on savings;
- 2) the income earned from the live sale of wildlife;
- 3) the income from sales of thatching grass and crafts, which goes directly to the individual;
- 4) the value of the wildlife that has been donated to a conservancy;
- 5) estimates of the value of meat that has been consumed locally.

The interest earned on earnings, and the profit from the sale of live animals, provide direct cash income to the conservancy. (This is different from the sales of thatching grass and crafts, which are under the control of the individual, albeit that they are based upon communal resources.) Donated wildlife and the estimate of the value of meat consumed locally are attributed values rather than cash income.

Some guidelines for the distribution of CBO benefits

The theory behind CBNRM emphasises the importance of the benefits that are needed for institutional change. The theory proposes that institutional change will only be sustainable if the net benefits from the change are substantial. The key principles outlined below are extremely useful in developing a benefit distribution plan for community-based organisations and conservancies.

- Within the CBO/conservancy, those who bear the greatest costs of wildlife production should receive the greatest benefits.
- The benefits generated must be greater than the costs. This means that CBOs/conservancies have to balance the investment in wildlife and natural resource management against generating direct benefits for their members.

- Wildlife, land, and other resources are community assets. There may be instances, especially with respect to the use and allocation of benefits, when collective or community interests have to take priority over individual interests.
- Appropriate, preferably quick and low cost, community-based ways of resolving conflicts should be used. It is inevitable that there will be disagreements within a community, especially over the distribution of benefits. For the long-term sustainability of CBOs, it is essential that these are resolved locally and without great cost to the community.
- Mechanisms should be put in place to allow for the participation of, and consultation between, different types of community members. Within any community there will be separate but overlapping categories of people. As CBOs develop over time it is important that the group representatives are in touch with other groups and understand their needs and possible requests for resources.
- It is possible for a single conservancy to benefit from several different sources of revenue (see above). It is important that the benefit distribution plans recognise the different forms of revenue and allocate them appropriately.
- Finances must be accounted for in a transparent and responsible way. Transparency is achieved by setting up a financial management system and then following its procedures. Deviation from the set procedures, for whatever reason, will reduce the transparency of the system. As well as being transparent, it is important that the system is accountable to its members.

The direct financial costs and benefits of CBNRM

There is a common misconception at all levels of society in Southern Africa that CBNRM is meant to completely replace traditional agricultural activities eventually. It has been shown that only in very exceptional circumstances, (very low human populations and very high wildlife populations), does the income from wildlife begin to approach that derived by households from agricultural activities (Bond, 2001).

Consequently, CBNRM should be considered a complement to existing sources of income instead through both the direct and the indirect benefits that can be earned. CBNRM is more concerned with adding new land use options to existing strategies, than replacing existing strategies altogether.

CBOs must allocate the appropriate financial resources to the management of natural resource activities. Common management costs that a CBO/conservancy committee will need to consider include, but are not restricted to:

- The wages for the community game guards, community resource monitors, and other employees (such as a wildlife manager or book-keeper).
- The costs of management activities such as fuel, allowances, transport, the costs of running and maintaining an office etc.
- The costs of meetings and administration, such as the payment of allowances to committee members.
- The maintenance of, and investment in, infrastructure such as community campsites and water points.

CBOs are therefore engaged in a complex balancing act. They need to invest adequate financial resources in management activities whilst retaining sufficient balances to provide tangible and direct benefits for their members.



Maintaining CBO infrastructure costs time and money

What early lessons were learned from direct cash payments in Zimbabwe?

The first regional example of direct household payments emerged from the Beitbridge District in Zimbabwe. Early on in the development of CAMPFIRE (December 1992), the community at Chikwarawara Village decided to allocate a substantial proportion of the village's revenue directly to households. The following concepts underpinned the use of direct payments in this instance, and subsequently elsewhere in Zimbabwe:

- Extension tool: direct payments at household level are an important means of demonstrating to members of a CBO that their natural resources, and especially wildlife production systems, are capable of creating cash benefits.
- Equity: cash benefits are a mechanism for ensuring that the collective benefit is spread throughout the entire community. This is in contrast to capital development projects that might only benefit a certain sector of the community.
- Proprietorship: households within a producer CBO should be able to derive their benefits in a way chosen by them. Should this chosen payment method result in the direct payment of a dividend, then this decision must be respected. Failure to do so reduces the level of proprietorship over the production system and the benefits derived.

Following the experience of Chikwarawara Village, a number of other communities in Zimbabwe experimented with direct payments from wildlife revenue. Through these experiences a number of important lessons have been learned including:

- Making household-level payments requires thorough preparation. This means that not only must there be general agreement that direct payments represent the best use of funds, but it is also important that the community defines the criteria that make households eligible. In addition, there must be a defined list of households that meet the criteria, and the organisers (including the CBO, support agencies and local administrators) must know how many households there are on the list in order that they can correctly calculate the dividend per household. These preparations can involve substantial costs. Therefore when the individual payments are relatively small, there might be a very good argument for keeping the revenue at the community-level and investing in projects or activities which do not require as much administration.

- Household payments do not exclude the option for communal projects. Firstly, it is possible that a community may choose to use only some of its revenue to pay dividends. An alternative is that beneficiaries receive their household dividend but then make a contribution towards a project, immediately or at some later date. This option gives the member or the household a high level of proprietorship over the benefits. It also establishes very strong links between the source of the revenue (generally wildlife) and the cash benefit.

The payment of cash dividends from wildlife in Zimbabwe did have its critics: the main opposition to the payment of wildlife dividends came from local government administrators. This group of stakeholders argued that payments to households did not result in the tangible “development of the community”. (The weakness of this argument is that it clearly fails to recognise that people and households are the fundamental building blocks of the community.)

What general lessons have been learned to date from the region regarding the distribution of direct benefits?

The use and allocation of benefits derived from wildlife revenue is still its infancy in countries such as Namibia. Nevertheless, there has been time to learn some important lessons from across the region regarding those payments that have been made. These include:

- If conservancies are to be fully empowered to manage their wildlife and natural resources, then they should have full control over the benefits that accrue from them. In this regard, it is important that support agencies and other stakeholders do not attempt to influence conservancy committees over how they spend their natural resource-based revenue.
- The timing of even modest payments can improve their impact on communities, especially if they are made at a time when cash income is either low or there are substantial demands for cash (such as the payment of school fees).
- Planning direct payments can become a major entry point for communities to raise and discuss other important issues in the conservancy. These issues have included: the form in which benefits should be distributed, the criteria for membership of a conservancy, and evaluations of priorities within the conservancy.

Across the Southern African region, there has been a general reluctance to use revenue that has been earned at the community level. There are several explanations for this trait.

- The first is that communities are given substantially less advice with respect to the use and allocation of revenue than with other aspects of CBNRM management, and so they often lack the skills to carry out these activities satisfactorily.
- Alternatively there is a fear that in using their revenue, they will make “mistakes” and therefore be held accountable by local bureaucrats.
- Thirdly, there maybe a perception within some communities that the accumulation of revenue is an achievement in itself.

Whatever the reason for the reluctance to use and allocate their revenue, the result is the same, i.e. that ordinary members of the conservancy do not directly benefit.

CECT in Botswana has been very successful in converting the area’s wildlife into a substantial cash income on an annual basis. It is interesting to note that the 2003 gross income of the CECT works out at approximately US\$200 per household. At the individual level however, there is very little benefit from wildlife, either directly or through VTC projects implemented with wildlife revenue. It appears that the current failure of the VTC projects would be a very good argument for the payment of annual cash dividends from wildlife to all households in the Enclave. As in other CBNRM programmes, it would provide a direct linkage between people and wildlife, it would ensure that all households benefited, and would remove the economic inefficiencies caused by investment in non-viable projects.

What are the indirect or non-financial benefits of CBNRM

- Prior to independence, many Southern African communities had little or no control over their natural resources, especially wildlife. In addition, many communities became dependent on outside interventions and agents; therefore it would be hard to overstate why growing control and self-determination is one of the greatest intangible benefits now created by CBNRM in Southern Africa.

- Improved natural resource management. Communal land households throughout Southern Africa depend on natural resources. (The nature and extent of this relationship will depend on the country and the location.) It is well known that poorer households generally derive a greater proportion of their household income from natural resources than better-off households. The intangible incentives for CBNRM can be generated by:
- Land use planning (Through CBOs, communities can plan their land use and allocate different activities to different zones. This can lead to more appropriate and better managed use of the community's resources.)
- Reduced costs of living with wildlife. Communities that are investing in measures to reduce human-wildlife conflict are reducing these costs to their members and therefore providing intangible benefits for the establishment and maintenance of CBNRM systems.
- There are very important intangible incentives created when conservancies are able to conduct their own hunting. This directly empowers them to manage, and make responsible decisions over, their own wildlife resources.
- The region generally suffers from a very high rate of unemployment. This is most acute in the remote rural areas where there are fewer job opportunities and only limited access to education. What is emerging from conservancies now is the intangible value of jobs that are created within the area and that allow people to remain within their communities and not to seek work as migrants elsewhere in the economy. The other great advantage of employment created through the management of natural resources and tourism is that the quality of the jobs created is much higher than those in agricultural sectors generally.
- CBNRM is also creating opportunities for commercial activities that can directly benefit individual households. The most common examples are the manufacture and sale of craft products. There are also outsourcing opportunities generated from tourism joint ventures: the outsourcing of laundry, the collection of firewood, and the cultivation of vegetables for lodge kitchens.

By way of an example from the region, currently it is estimated that 170 people are employed in Madikwe, South Africa. This exceeds the best estimates for employment under the 'cattle model' by 90 persons. The average salaries of the

people employed are much higher than those that could be expected under cattle production, while there are also important opportunities for both skills development and promotion.

What are the costs of living with wildlife?

At the level of the individual or the household, there are essentially two kinds of costs that may arise out of living with wildlife. These are:

- **The costs of the loss of access.** In establishing hunting and tourism ventures, communities generally need to undertake some land use planning and develop zones that are attractive to their joint venture partners. Through this process, some households and community members might lose access to important natural resources. This is an issue that has to be dealt with at the conservancy level. In practice, and where it is necessary, the community might need to compensate individuals for the losses or the costs that they have incurred.
- **Human wildlife conflict:** The costs of living with wildlife (or human-wildlife conflict) have been referred to already in this Manual. As wildlife numbers improve so the costs of living with wildlife can escalate. Communal area conservancies have little control over the species that occur on their land and frequently need the large and more dangerous species to be present in order to make their hunting or tourism leases viable. The success of wildlife-based CBNRM activities will often depend on the extent to which the costs of living with wildlife can be reduced.

In addition to the costs of living with wildlife that fall to the individual or the household, there are other costs that will fall to the conservancy or CBO. These will include:

- **The transaction costs.** These are the costs that are generally associated with the process of institutional change. (See Chapter 1 for a list of some of these.)
- **The management costs.** It is important that the management systems that are designed are extremely efficient so that effective management is achieved at the lowest cost. For valuable natural resources such as wildlife, it is important that any law enforcement system is designed after an evaluation of the real threats (both internal and external) to the resource.

- **The opportunity costs.** When a producer community makes a choice about institutional change, it is giving up another option that it could have followed. While it is technically correct to include the notion of opportunity costs as a category of costs associated with institutional change, they are rarely calculated or included because they are so difficult to determine.

In general, there is a tendency for those organisations that support CBNRM activities to focus their efforts on the income-generation aspect of CBOs. It is equally important that CBOs and their supporting organisations consider their costs. This means critically analysing their organisational structure, institutions and activities in relation to their costs, and the gross income of the conservancy. CBOs and conservancies must be developed in a cost-effective manner with a focus on efficiency. In this regard supporting organisations must be very careful not to develop systems and activities that are overly dependent upon capital.

What are the four key principles of financial management by CBOs/conservancies?

Financial management of CBOs/conservancies must be seen to be:

- (a) accountable (b) transparent (c) accurate (d) rational

Conservancies and CBOs should have the financial management skills to manage their income and their expenses. This is important because inefficient or poor financial management will diminish the net incentives for institutional change at the household level. Poor financial management by a CBO/conservancy will also reduce the credibility of the management committee in the eyes of the members, the government and the supporting agencies.

Financial management by community-based organisations can be difficult because CBOs for the management of wildlife and natural resources are often found at great distances from financial institutions such as banks. This means that banking has very high transaction costs. In addition, there is generally a scarcity of those people with the appropriate skills and expertise to manage the financial affairs of CBOs.

Lastly, there is often substantial social and economic pressure on those who have been elected or recruited to manage the CBOs affairs.

- In addition to being efficient, the financial management systems that are used by CBOs/conservancies must be accountable to their membership (the first principle, above). Accountability is an interesting concept. It does not mean that the CBO/conservancy committee needs to involve every member in every single decision. It does however mean that interested members should be given the opportunity to ensure that the money is spent according to their wishes. One way that this can and is being done is by the CBO/conservancy holding annual general meetings (AGMs) at which its financial affairs are presented to the community and they are allowed to comment.
- The transparency of a financial management system (the second principle) will depend on the management systems that have been put in place. The systems that are required by CBOs/conservancies will need to be able to track the income that is earned. In general, these will be relatively large single payments made by commercial sector partners. Tracking expenditure will be another chief task of the system, as CBOs/conservancies tend to make many small payments on a continuous basis throughout the year. Those persons who are in charge of the financial affairs should ensure that the systems that are in place are used consistently. If it is necessary to make large unbudgeted payments, there should be a process for soliciting the approval of the members of the CBO/conservancy.
- CBOs/conservancies are largely concerned with fairly simple cash management. There are three parts to a simple cash management system which can facilitate financial accuracy (the third principle). These are:
 - 1) **Budgeting.** The process of developing and formulating a budget has two separate functions: These are: (a) planning income and expenditure, and (b) controlling income and expenditure. During the financial year, actual income and expenditure need to be compared against the budget on a regular basis. This will allow adjustments to the budget to be made (these will be necessary due to the differences in the planned and the actual income and expenditure).

- 2) Accounting.** The accounting system will record the income received and the payments made by the CBO/conservancy. Individual accounting systems will be developed by CBOs/conservancies in order to meet their own particular needs. It is important that the system is simple and appropriate, given the skills of the people who are responsible for financial management. It is also important that the personnel who are responsible for financial management are consistent in the way that they conduct the financial affairs of the CBO/conservancy and that they do it on a regular basis.
- 3) Banking.** All CBOs/conservancies will need to set up a system whereby they will keep most of their money in a secure bank account. They will, however, also need to have a safe system for keeping some 'petty cash' on hand to make small incidental payments.
- One principle that is common to both financial management systems and business plans is that of financial rationality (the final, fourth principle). This simply means that the CBOs/conservancies should make financial decisions based upon the understanding that the benefits of any decision ought to be greater than the costs. This principle can apply at different scales. For example, an enterprise might have run out of printed receipts. The cost of a new receipt book is very small, whilst the benefit of having a receipt book is that the financial management system continues to record the sales made. It is therefore a rational decision to purchase a new receipt book. However other decisions are more difficult. A conservancy may wish to think about purchasing a vehicle. The initial cost of a vehicle represents a significant capital outlay for a conservancy. In addition, it will incur running costs through the purchases of fuel, oil and frequent maintenance. The conservancy should only purchase the vehicle if the benefits of doing so clearly exceed its costs. It is not always that easy to make such decisions.



CBOs have to balance the benefits and costs when a large capital outlay is involved. Is the decision financially rational?

Business plans for CBOs and conservancies

CBOs/conservancies and their various enterprises are, in effect, small businesses. Consequently, as we have begun to see in the last section, it is very important that they are managed as businesses. This means that they should have a business plan both at the level of the conservancy/CBO and for each of their enterprises.

A business plan is simply a tool that can be used to ensure that a business activity is both financially viable and is then maximising net benefits to the community. The plan does this by predicting costs and income, setting up the management structure, and planning for the future. A business plan needs to be developed to meet the specific requirements of any enterprise be it a CBO/conservancy or an individual community-based endeavour, such as a campsite. There is, however, a model format that can be used by a facilitating agent/NGO to assist CBOs/conservancies in drawing up their business plan. This common format will include:

1. **An introduction to the enterprise.** It is important that the business plan provides some background information on the enterprise. This will include: where it is situated; a description of the area (ecosystem, wildlife species and abundance, other attractions); and some of the history of the enterprise to date. The introduction can also provide a written statement of the goals or objectives of the enterprise.
2. **The business plan** should next briefly describe the enterprise's facilities or infrastructure. For example, a business plan for a community campsite will list the facilities available to visitors, how many units there are, and what supporting infrastructure there is. This will include units for staff accommodation, offices, water and heating systems, ablutions etc. The description of the facilities can also include future plans for expansion, if there are any.
3. **The enterprise's current and future services.** Some of the enterprises that are now being developed by conservancies are different forms of tourism. The services that the enterprise offers are its sources of income. The business plan should include a brief description of these services and, most importantly, their current per unit charges.
4. **Capital investment.** Many of the current enterprises being developed by conservancies have been built with grants from donors. It is important that the business plan should outline the cost of the facilities that have been constructed, or that will be constructed. It is also very important for the enterprise to consider the implications of the repairs and maintenance to the infrastructure. All infrastructures, no matter how simple, will need constant maintenance. The costs of the maintenance must be built into the enterprises business plan. Failure to consider the costs of repairs and maintenance will severely harm the medium to long-term viability of the enterprise. If it is possible, a sub-section of the business plan capital investment section should deal specifically with a proposed maintenance schedule. Where the enterprise is being constructed in phases, the business plan section on capital investment should also present what the future plans are, how much they will cost, the sources of funding and when the development is likely to take place.
5. **The management structure of the enterprise.** The management structure deals with relationships between different personnel and identifies their roles. This means that the management and the staff structure of the enterprise needs to be formally defined. So for example, the management structure of a community campsite will identify the manager and his/her relationship to all the other staff within the camp.

The management structure will also determine the relationship between a business enterprise and the CBO/conservancy. Management by committee is not the best option for community income-generation enterprises: entrepreneurial success often requires that those involved with the enterprise make quick, market-related decisions. This response cannot normally happen when committees are involved. The other reason to separate the management of an enterprise from the management of the CBO/conservancy as a whole is so that the financial viability of the enterprise is easy to determine.

6. **Staffing.** Once the management structure of the enterprise has been defined it will be possible to start considering the staff needed to run the enterprise. Depending on the size and the complexity of the enterprise, the staff and their positions can either be defined when the structure is considered (i.e. previous step) or at the point at which the staff positions are filled. For community enterprises it is very important to restrict staffing to essential personnel only.



CBOs must take care not to become a kind of local employment agency. If too many personnel are employed, the venture will not be financially viable in the long run.'

The management structure and the identification of the posts will also help the enterprise, the conservancy, and the supporting organisations to determine what kind of training or capacity-building will be required by the enterprise. There will always be some gaps between existing staff skills and the skills required. The analysis of this difference is known as the training needs analysis.

Determining the staff required for an enterprise will also help those responsible to work out salaries, conditions of employment, working hours, leave etc. It is always better to start an enterprise with too few members of staff than too many. It is much easier to increase the number of staff because the enterprise is doing well than to retrench staff because the enterprise is not performing financially.

7. Marketing. Included in the marketing section of the business plan is information on:

- a) Goals and objectives. The goal of the enterprise is its long-term vision. The objectives of the enterprise are often formulated as the means to achieving that vision.
- b) Product. In tourism enterprises it is important to differentiate between the facilities that exist and the services that the camp might offer. For a tourism enterprise, it is important to determine its “unique selling point” or USP. The unique selling point is the specific reason why people will come to the enterprise, e.g. to visit nearby rock paintings, to view game in a mokoro etc.

Every viable enterprise needs to understand the market that it is aiming for. Markets can be extremely complex and difficult to assess. One key process for learning about the market is called the market survey. These can be undertaken in several different ways and can range from simply visiting other enterprises with similar products, and visiting markets or trade fairs, to conducting market research through questionnaires. For a tourism enterprise, it is extremely important to identify the market that the product is aiming at capturing.

- c) Price. While identifying and researching markets, it is important to simultaneously conduct an investigation into the prices at which the

enterprise should be selling its goods and services. The pricing structure will be one of the most important decisions that the enterprise will make. If the price is set too low then the enterprise might sell lots of product but it will not make any money. If the price is set too high, then the enterprise might sell only a few units. Therefore when the price is being set, it is important to think about the gross revenue that will be earned. Gross revenue is the unit price multiplied by the number of units sold.

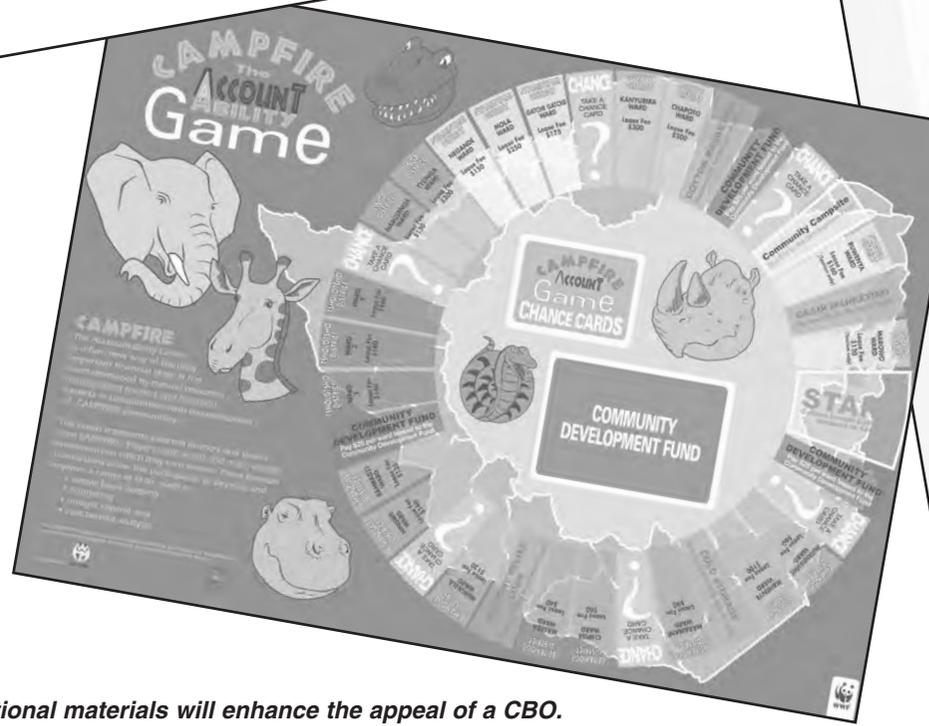
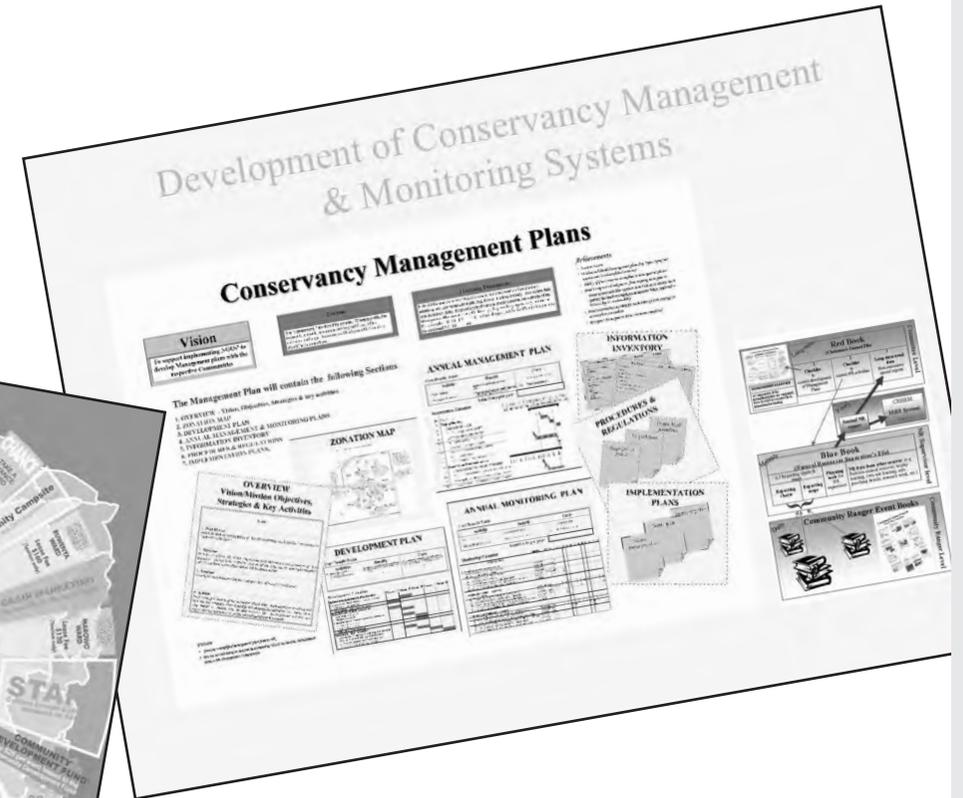
- d) Promotion and awareness. All enterprises have to advertise their product. For a community enterprise, it is important to decide upon a promotion strategy for the goods and services that are being produced. A small community campsite might have a very limited promotional campaign. It might decide that the only advertising that it will do will be in the form of a brochure, and from then on it will rely on ‘word of mouth’. For an enterprise with an exceptional product this might work. Other enterprises will have to use multiple strategies to achieve their objectives.

8. Financial. A key component of every business plan is its financial information. This is usually presented in the form of a financial model. The model will project the costs and the benefits of the enterprise for a given number of years (usually five). The model should demonstrate how much money the enterprise will make. (To do this, it might be necessary to adjust the information in the model on several occasions over time. Each adjustment is known as iteration.) Once the model has been agreed upon, it then provides targets for the management of the enterprise. Obviously, the objective is to exceed the projected income and to save on the expected costs of the enterprise. This will maximise the revenue to the enterprise.

Who should be involved in the preparation of the business plan?

The preparation of the business plan is an activity that will need to be supported by an outside agency. The ideal situation would be to prepare a business plan for an enterprise over a series of planning workshops. The principle that it is done at the planning stage is an important one; at the moment, too many community enterprises are being implemented without proper business plans or planning. The CBO/conservancy committee and other primary stakeholders should attend these planning workshops. The enterprise should only be implemented if the business plan demonstrates that it is a viable and a robust project.

Some projects may need a revision of the business plan at some stage. These will often be restructuring exercises, necessary because the project is not developing as anticipated. These 'revision workshops' will involve a different set of stakeholders and very often will require a slightly different approach in order to discover what went wrong with the original project and why the costs and the incomes projected in the original model were inaccurate.



Well-designed promotional materials will enhance the appeal of a CBO.

Introduction

The implementation of CBNRM is a collective effort by communities, government, the private sector and NGOs. The monitoring and evaluation (M & E) system is an essential part of the preparation and implementation of development assistance and allows for joint planning, programming and review. Monitoring and evaluation also facilitate learning from experience. The collection and analysis of data is necessary to improve accountability and the effectiveness of management decisions. Various people use M & E methodologies for different purposes. As a result, you will find different definitions for the same term and it is easy to get confused!

What is monitoring?

- it is an ongoing process for collecting and storing information;
- it is an integral part of project management and not just something done by an external team.

Monitoring:

- a) is the routine collection of information on selected aspects of specified activities;
- b) identifies what has changed, and what is needed, through an ongoing process;
- c) is a management tool that provides information needed to make decisions;
- d) helps to ensure that effective use is being made of available resources;
- e) results in individual and group learning;
- f) promotes ownership of the project activity;
- g) enables transfer of learning to other situations.

Monitoring information can be quantitative or qualitative. Quantitative (usually relating to amounts or numbers) information, in the context of CBNRM processes could include factors such as: amounts of thatching grass cut; numbers of community members who received training in financial management; income generated from a community campsite; number of antelope harvested for own-use in one year.

More qualitative (usually relating to attitudes or descriptions) information could include issues such as: changes in the availability of suitable thatching grass; the application of the financial management skills developed during training; the ways in which the income generated from the community campsite was used by the committee; the ways in which own-use hunting has contributed to community members feeling that they have benefited from conservation activities.

It is essential to include components of both qualitative and quantitative data collection in any CBNRM monitoring system. While it might be important to know how many springbok were utilised in an own-use harvest by a conservancy, it is equally important to know whether people's attitudes towards CBNRM have changed, for example.

What is evaluation?

Evaluation can be understood as the assessment and analysis of the information obtained by monitoring. Evaluation uses the monitoring information to assess the degree of progress or change that has occurred over a period of time. The type of information required, and the ways in which the assessment and analysis are conducted, will usually be determined by the objectives of the evaluation exercise. Evaluations can be done internally by stakeholders within the project, by an external group, or jointly by both groups. Participatory evaluations are especially useful when there are questions about implementation difficulties, effects on partners, or when information is wanted on stakeholders' knowledge of the programme.

Evaluations can be placed into two broad categories: summative evaluations outline the achievements at the end of the project period and are aimed at determining the essential effectiveness of projects/programmes. They are particularly important in making decisions about continuing or terminating an experimental programme or a demonstration project. Summative evaluations are often required by the donors of a project. The methods for summative evaluations often involve experimental designs and measure outcomes statistically. Formative evaluation is conducted within the project period to inform the future course of the intervention or activities. It is a continuous process for collecting and storing information. The methods for formative evaluations rely more heavily on site visits, direct observations of programme activities, surveys and in-depth interviews. Whether the evaluation is to be summative or formative (or both) determines the manner in which the evaluation is conducted. Both summative and formative evaluations can be participatory.

How are inputs and outputs linked

- Inputs are the resources that are the basic materials that allow the project activity to take place. Inputs could include items such as: delivery of technical services, the provision of training, the purchase of equipment, making operating funds available, as well as capital inputs.
- Outputs result directly from the inputs and are the first results of the specific activity that the inputs were supporting. Outputs could include items such as; facilities created, number of activities implemented or the number of people trained.

For example, if the activity is the capture and translocation of wildlife from a game farm to a conservancy, then the inputs would include the appointment of a game capture unit, the availability of the selected species of game, the funds being made available to hire the required consultants and experts to undertake the translocation, and the availability of funds and equipment to prepare the conservancy to receive the animals. The outputs would include the holding bomas constructed in the conservancy, the capture of a number of animals, their transport to the conservancy and their safe arrival in the bomas.

What is the difference between an outcome and an impact?

- An outcome is the direct consequence or result that follows from an output. The outcome can be seen immediately or within a short period of time. The impact of the activity is the long-term result.

Let's refer to the example used above. The outcome of the activity is that immediately after the translocation activity, the conservancy had a species of wildlife that had become locally extinct. The biodiversity of the area was increased through the re-introduction of the species. The impact of the translocation is that five years later, this species had become sufficiently established to allow trophy-hunting to be conducted within the conservancy thus giving tangible (money) and intangible benefits to the conservancy members.

The outcomes and impacts resulting from a project or programme are sometimes very difficult to link to a specific activity. Because of the integrated nature of much CBNRM development, outcomes can be linked to a number of contributing activities. So, when analysing and interpreting data gathered during monitoring, it is important to be careful when drawing conclusions or deciding what the information tells you. Being accurate and avoiding bias (i.e. not making your data tell you what you want it to reflect but rather what it really reflects) are two key challenges in the M & E process. Unless data and conclusions are accurate and objective they may not be believable or seen as convincing. In countries where several different support organisations may be involved in implementing activities in one area, it is very difficult to establish linkages between processes and outcomes.

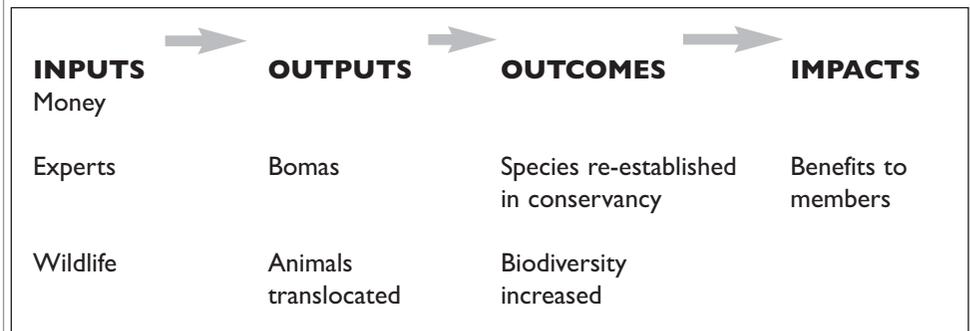


Figure 4: Example of the progression from inputs to impacts.

How are indicators and targets linked?

The concept of an indicator is an intimidating idea to many people. It is useful to think of it as a clue, measure, marker, hint, sign, or piece of evidence that can be used to show changes that have happened. There are many different types of indicators. More than one type of indicator can be chosen for each activity. When planning a project's M & E, it is necessary to have clear and measurable goals in order to have useful indicators. Once the indicator has been determined, it is important to also set a target for that indicator. If a project indicator is the number of people who received training, then the target might be 25 people trained each year. This target would have to be realistic and appropriate for the resources and time allocated to this activity.

Within CBNRM programmes, two types of indicators are most often used:

1. Performance indicators: monitor the implementation progress of the project or programme. They would include indications of whether the inputs were successfully received and whether the related activity took place resulting in the expected outputs. Inputs can usually be monitored through the financial reporting system. Outputs can usually be monitored through the monthly or quarterly progress reports.
2. Impact indicators. For CBNRM, these indicators specifically measure institutional, socio-economic and environmental impacts.

What are the principles and values of monitoring and evaluation?

- M & E should form an integral part of the management system. They should not be regarded as activities separate from other management tasks.
 - M & E provide a user-friendly system that is culturally sensitive. This includes valuing indigenous knowledge. The M & E system should also be easy to use by staff and target groups. While some basic training may be needed on data collection and analysis, very technical or complicated systems will not be appropriate.
 - M & E are participatory. The participation of stakeholders in M & E should help ensure that management decisions better address their needs. All stages of the M & E process should incorporate stakeholder participation: deciding what is to be monitored; selection of indicators; data-collection, analysis and use.
 - M & E systems are transparent. All methodologies and resulting data and information should be clearly communicated in the appropriate manner to all stakeholders who will be affected by, or who are interested in, the process and its results.
 - M & E systems embrace error. Acknowledging and learning from mistakes is essential. Learning from both successes and mistakes (particularly when based upon assumptions) will ultimately lead to the improvement of the project.
- Monitoring should focus on usefulness of information. All data that are collected should be useful and linked to decision-making.
 - Monitoring is a continuous process. If monitoring is to feed into on-going management and decision-making, it must be a continuous activity. The frequency with which data are collected will depend on what activity is being monitored.
 - Monitoring systems should collect and analyse a minimum but sufficient amount of data and information necessary both to understand how the project is developing and to make effective management decisions on the progress of the project.
 - Monitoring is a flexible system that accepts different approaches. Subjective and scientific data should be equally valued. One type of methodology should not be given preference over another.
 - Monitoring will measure social, economic and environmental components, which are considered of equal importance and should be weighted accordingly. In monitoring the success of an intervention, one aspect should not take precedence over the others.
 - Evaluation is a periodic activity. Evaluation should be carried out periodically, both throughout the duration of the project and after its completion. Whereas monitoring is usually done by the project staff as part of day-to-day project management, evaluation should be a separate activity.
 - Evaluation requires comprehensive information. An evaluation can make more use of detailed information than that utilised by project monitoring. This is likely to include both more in-depth information and broader-ranging information on the wider context. Additional time and resources can be set aside both for the collection of information supplemental to that recorded by the monitoring system, and for more elaborate analysis.

Why are baseline data collected?

Baseline data measure the situation at the start of a project and are the points against which all later data are compared. The baseline data form the first data point on a trend graph.

Monitoring starts at a certain point, usually the onset of a particular activity. The ideal situation for monitoring would be to determine a baseline before the monitoring begins. This would involve going and measuring what situation exists before the activity starts. You would know exactly what the situation was before the intervention took place and would then be able to measure the changes that take place over time.

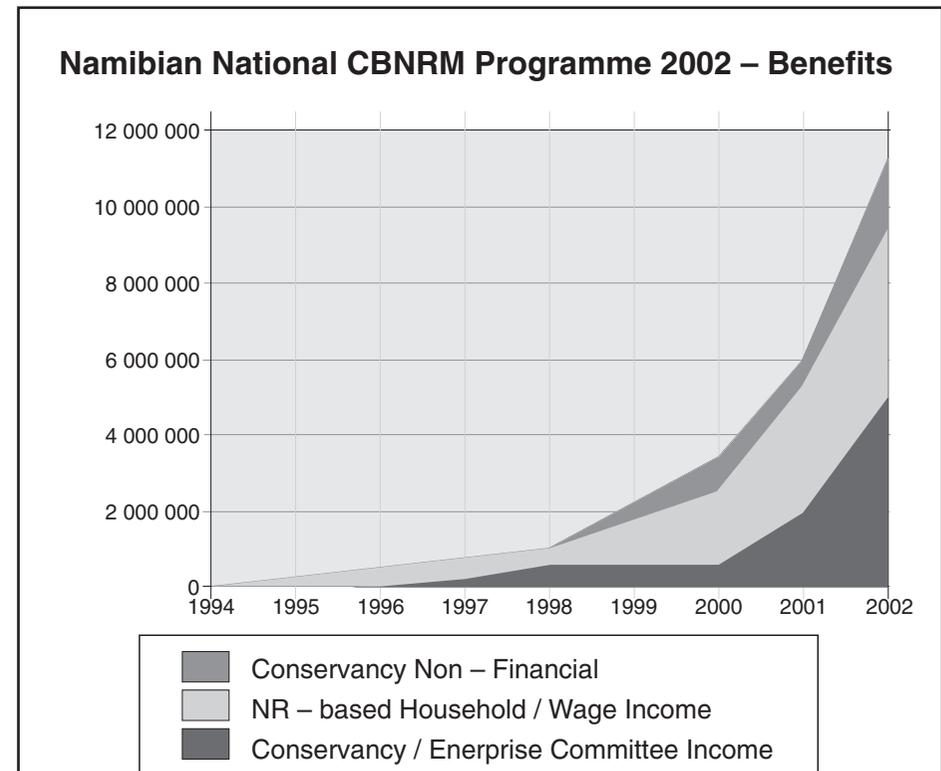
For some indicators, the baseline information is easily obtainable whilst for others it presents a more complex problem. For example, the cash earned by a village from a community campsite would be zero before the campsite is developed. The income from the campsite could then be measured on a monthly basis and the annual income plotted on a graph. On the other hand, when measuring the baseline for a plant or animal species, it's unlikely to be zero. Monitoring of that species must be done in such a way that the new information can be compared against the baseline data. Careful consideration needs to be given to the methods used in the baseline measurements to ensure that later measurements will be comparable. The methods need to be efficient and effective otherwise it will not be possible to sustain the required levels of monitoring on a regular basis.

How are time trends useful?

Time trends measure the change in a particular data set over time, usually by plotting information onto a graph. With M & E in CBNRM, stakeholders are usually more interested in the trends over the long term than in collecting detailed quantitative information. For certain indicators, the cost and time involved in increasing the accuracy of the monitoring is not worth it – trend data about a particular resource is sufficient to make management decisions.

For example, let's consider the benefits that CBNRM has brought to rural Namibians. Benefits can be divided into non-financial benefits (e.g. meat), wage income (e.g. cash from salaries) and income to the conservancy from various enterprises. The trend graph is shown in Table 4, on the right.

Table 4: Namibian national CBNRM Programme benefits in Namibian dollars, 1994 - 2002



What spatial and temporal scales are used in monitoring?

- Spatial scale** refers to the area over which an indicator is measured. Some indicators can be measured over a large area, e.g. across a whole country. However, other indicators vary spatially and there is often the assumption that a single indicator value for the whole country will be adequate. When selecting indicators it is essential to determine whether the indicator is appropriate for the spatial scale of the project area.

2. Temporal scale refers to the time span over which the measurements are being made. If your indicator is to measure the recovery in a community forest then monthly plant measurements over the period of one year would not be appropriate, but annual measurements over a period of ten years would be. When designing a monitoring system, several different indicators will be measured at different time intervals. Some indicators will be measured within several localities of the project area whilst others may involve a single measurement for the whole project area.

Developing M & E systems

CBNRM is based on adaptive management. This means that objectives have been set, implementation plans developed and that there are effective management and monitoring systems. However, it is not enough to merely develop management and monitoring plans. These have to be implemented and then management needs to be adapted or changed accordingly.

M & E are primarily tools to assist and guide with planning, learning and change in different settings. Organisations and the individuals within them are only able to learn and adapt if the environment or culture of the organisation can welcome and embrace change. M & E can allow organisations to:

- evaluate the impact of a certain project or programme;
- gain information which can be used to improve project planning;
- build a learning culture, and processes to strengthen learning within organisations;
- build accountability between stakeholders (donors, project managers, governments, communities).

Some of the most common problems encountered with M & E systems are based on:

- a lack of commitment to M & E by those doing it;
- a poor understanding of M & E;

- the perception that M & E is an obligation imposed from outside the organisation that has to be fulfilled.

Any M & E system should be built on defined needs and a clear purpose. In order to do this it is important to identify who the primary users of the M & E system will be, and exactly what the system will be used for. In CBNRM there are various stakeholder groups who use M & E systems. It is critical that M & E systems are focused on the needs of each particular group.

Who needs M & E systems?

In any development setting, and in CBNRM in particular, there is a range of groups needing M & E systems. These may include:

- national government;
- responsible government departments;
- project implementers such as NGOs or the private sector;
- community-based organisations (CBOs) such as conservancies;
- local people (primary stakeholders in CBNRM) such as the conservancy members who are the direct resource users.

Good practice will involve ensuring that the key stakeholders are involved in identifying what they need from the M & E system and how they are able to go about implementing it. Will the system be relevant for that group?

Who should be involved in planning and design

To ensure success in M & E systems it is important to involve the key stakeholders throughout the planning and implementation process. At the centre of the process should be the primary users – those people who will be making direct use of the M & E system and the information that it will provide. This will allow for those involved to establish ‘ownership’ over the system and to maintain an interest in the system and its results.

What are the steps in developing an M & E system?

There are a number of steps to be followed in establishing an M & E system. This section highlights each of the steps and the critical questions to ask during each stage.

1. Establishing the purpose and scope – Why do we need M & E and how comprehensive should our M & E system be?

From the beginning, it is essential that all potential partners/stakeholders have a common vision, clear objectives, and measurable indicators developed in a participatory way. During this step the primary users, together with relevant stakeholders, should ask “What are the main reasons that we need to set up an M & E system?” The answer to this question should tell you what the specific purpose of the M & E system is.

The general purpose of the M & E system is to provide regular information on project progress to allow project managers to change and improve the way the project is implemented. It is also to provide information on project progress to other key stakeholders involved in the project. There should be a clear link between the issues that need to be tracked or measured and their relevance to the goals and objectives of the project. When identifying the purpose of the M & E system the goals and objectives of a project should be revisited. The purpose of the M & E system should then guide decisions about how much to monitor or what methods to use.

Once the purpose or reason for the M & E system is established and clear, it is important to decide on the extent of information to be gathered i.e. the scope of the system. How sophisticated or simple can the system be? Can the system be implemented with the existing staff skills or is an expert required? How much data will be required? For instance, can the M & E data just cover a sample or is more thorough and detailed information necessary? It is also important at this point to consider what is possible in terms of time and resources available for the M & E system. Consider the following:

- What level of funding is available?
- What level of participation is possible and desirable?
- How detailed does the M & E information have to be?

- What sort of baseline is possible and desirable?
- What are the current M & E capacities of staff or partners organisations?

2. Identifying information needs and designing indicators – What do we need to know to monitor and evaluate our project in order to manage it well?

Once the purpose and scale of the M & E system have been established, it is important to identify what information you need to know. This is usually done by establishing indicators. Selecting indicators is a very important activity and one that can be guided by asking questions. These questions are simply the ones you would want to be able to answer with the data you have gathered. What questions would you need to answer to know how well you are achieving the objectives of your project?

Once you have established what you want to know, you would then decide which indicators will provide you with the information you want. When you design or select indicators, it is important to remember that the qualities of a good indicator include:

- *Appropriateness* – does it provide the information you need to make decisions?
- *Ownership* – did key stakeholders select the indicator?
- *Low cost* – can you afford (in time and money) to collect the data?
- *Simplicity* – is it better to have a few indicators your project will actually use or many that might be ignored?
- *Clarity* – is it obvious what the indicator is measuring?
- *Measurability* – will you be able to get the information easily?
- *Neutrality* – does it have hidden or multiple meanings?
- *Availability* – considers existing data (is someone else already collecting this information)?
- *Relevance* – are you measuring something that matters?

One common tool to help set indicators is to use the acronym SMART. Are the indicators:

Specific?

Measurable?

Attainable?

Relevant?

Time-bound?

When selecting indicators, there are various different options that can be used. Some indicators will give information about numbers or amounts (quantitative), while others may tell you about attitudes or describe situations (qualitative). Some indicators relate to activities, or whether or not an output was produced (performance), while other indicators tell us whether the activity has produced the change that was intended (impact). Sometimes we cannot get the precise information needed, so indicators are used that indirectly tell us what we need to know (proxy).

3. Planning for information gathering and organising – How will the required information be gathered and organised?

Now, the planners need to think carefully about what data can realistically be collected, depending on the human and financial resources available. Collecting performance data, such as the number of training workshops held, is relatively easy. Collecting impact data, such as whether or not the training has led to a change in conservancy income, will take much more time and could cost more. The tools chosen will depend on different circumstances and may vary. Key points to remember:

- use the most appropriate method;
- keep focused – be clear about what you need to know (not what it might be nice to know);

- check that no one else is already collecting the data;
- clearly identify who is responsible for what – different data will be collected at different times and by different people.

There are a number of options for data collection which include:

- a) log or record keeping forms (such as the 'event book system' described in Chapter 5);
- b) ecological assessments (including game counts and inventories), GIS (Geographic Information Systems), photographs;
- c) questionnaires and surveys;
- d) case studies, story-telling, diaries;
- e) anthropological tools (participant observation, oral histories);
- f) Participatory Rural Appraisal (PRA) approaches including:
 - focus groups – mapping, visualising, diagramming
 - semi structured interviews – timelines

At the beginning of the process of information collection, a baseline is often established by collecting baseline data. The baseline provides a point for comparison. Once data have been collected, they need to be organised into a manageable form so that you can use them for analysis. Data usually need to be collated (collected) into an organised system. When organising data, it is important to keep check of the accuracy, sense and validity of data gathered. Should you discover problems or inconsistencies, the data should then be verified (checked over again). This involves obtaining the same information from different sources using different methods to ensure it is correct.

Remember that in participatory monitoring and evaluation, key stakeholders are the end-users and should be involved during each step of the process. It may not be logistically possible to involve all the stakeholders at all times, but those who will eventually use data and findings should be involved at all stages.



Questionnaires can be a valuable participatory data collection tool.

4. Planning analysis processes and events – How will we make sense of the information gathered?

Simply collecting and sorting data is a worthless exercise unless the data is understood, analysed (what does it mean?) and the results used to change and improve management. Making sense of data is often overlooked and little time planned for this part of the process. Ensure that adequate time and resources are allocated well in advance for the following steps of the analysis process:

- decide on how to analyse (based on what you need to know ? add; compare; note similarities, differences, the unusual);
- analyse data (both quantitative and qualitative);
- integrate and synthesise findings;
- examine the data and determine or assess what the data tell you.

It is important to note that different types of data will require different types of analysis. Quantitative data analysis often involves calculations such as working out totals or averages. Where large amounts of quantitative data are collected, the calculations could be carried out by people with statistical expertise. The process of analysing qualitative data is more complex and involves going through the content of the information collected and forming conclusions. Qualitative data may be limited to descriptive narratives or may require systematic analysis using quantitative approaches.

During this stage, there may also be lessons learned about the monitoring process itself that suggest that the monitoring process should be changed and improved. Whilst qualitative data collection methods can be changed relatively easily, standardisation of methods is essential for the comparison of quantitative data.

Remember that storing data carefully in a clean and safe place is important. You may need to refer to the data again or wish to pass it on to another individual or institution. You may have stored results or data on a computer. Therefore it is good practice to keep paper versions in case you need to refer back to the records; often data stored on computers can be vulnerable to theft or computer failure.)

5. Planning for reviewing results and making changes – How will we use information/results to make improvements?

It is this stage of the process ? the evaluation stage ? that makes the M & E process complete. The full M & E cycle provides for 'adaptive management' ? the process of reshaping and improving management practices or project design based on the lessons learned through M & E.

Critical reflection is often scheduled to happen at different times and involve different stakeholders (possibly on a quarterly, annual or other periodic basis). Reflection can be done informally (through ongoing discussions) or formally through workshops, presentations or meetings. After asking "What is happening?" it is then essential to ask:

"Why is it happening?"

"What are the implications for the project?"

"What do we do next?"

Deciding what to do next may affect project management and it may impact upon the overall project design. It is important to document the decisions made after review and evaluation and ensure that processes are in place to support the implementation of those decisions.

6. Planning for quality communication of results (reporting) –

What, how and to whom do we want to communicate in terms of our project activities and processes?

Now that monitoring data has been collected and analysed, and improvements to management planned, it is important to decide who needs to receive what results of the monitoring and how those results should be presented in order for them to be useful. Monitoring may be done for a number of different stakeholders. Often donors require reports for accountability reasons, but there may be other groups to whom you will want to communicate findings and 'lessons learned' for other reasons. For example, if your findings may be relevant to inform policy, they should be shared with government officials; documented lessons learned could be shared with partner projects.

The reporting of results may have been planned ahead of time. For example, community game guards may be required to give monthly reports to their supervisors who in turn have to give a quarterly report to the Conservancy Committee. Donors usually have certain requirements for reporting.

Different audiences may want the information in different formats. Plans should be established to determine who will take responsibility for producing and disseminating information, and the timeframe in which it should be done. Not only may different audiences require different feedback formats but different formats or approaches may be more suitable depending on the audience. Feedback can be given formally or informally. Information can be communicated in many ways including:

Form of Presentation	Examples
Written reports	<ul style="list-style-type: none"> – quarterly, mid-year or annual progress reports – newsletters – financial reports – case studies – log frames
Oral presentation	<ul style="list-style-type: none"> – verbal presentation – informal discussions – radio programmes – plays or role plays – stories

Form of Presentation	Examples
Visual displays	<ul style="list-style-type: none"> – posters – maps – charts – graphs – photographs – videos – cartoons

Some things to consider when giving feedback:

- Is the message clear for the specific audience?
- How often will you provide information?
- Is your feedback timely (i.e. not given months after the information was gathered and perhaps now irrelevant or outdated)?
- What venue or location will you use? (For example can the information be given out during other events, such as at church services or do you need to plan a dedicated meeting or workshop?)

7. Planning for necessary conditions and capacities – What is needed to ensure that the M & E system actually works (staff, training, logistics)?

Earlier in this chapter we discussed some of the more common problems that are experienced with M & E systems. In order to achieve the most effective results with an M & E system it is important to address the following:

- Do staff/participants have the capacity to implement and manage the M & E systems? Human capacity is one of the key elements required for successful monitoring and evaluation. If skills do not exist, the project can invest in training and building the skills of existing staff, hire new staff with the appropriate skills, or hire an outside expert or consultant to assist.

- Are there sufficient incentives for the implementation of monitoring and evaluation? It has already been noted that a lack of commitment generally leads to poor monitoring and evaluation. Are staff or stakeholders in an M & E system sufficiently motivated to make it successful?
- Do clear roles, responsibilities and systems exist for M & E in the institution? If it is not clear who is responsible for what in terms of M & E in the organisation, the result may be that little is achieved, or that there is considerable overlap. Having proper systems in place (that were developed with the input of those running them), and clarifying different roles and responsibilities, are key steps to success.
- Does the organisation have enough resources for monitoring and evaluation? Human capacity is discussed above and there may be the need to budget for training, hiring additional staff, or using consultants. It is usually estimated that between 2 ? 15% of a project or organisation's budget should be put aside for M & E activities. Planning M & E from the budget phase makes sure that this is a priority activity for the organisation and ensures that staff will have the resources they need to make it successful.

What tools are available for participatory monitoring and evaluation?

A great number of tools and systems exist for M & E. Different tools are useful in different situations, and the choice of tool needs to be guided very much by the setting, existing skills, information needed and potential users.

A selection of the most commonly-used tools is described below. Remember that many more tools and approaches are available for use in M & E. As mentioned at the beginning of this chapter, different users often have different words or phrases for the same thing. To avoid confusion you can always ask people to clarify what they mean in order to find out whether it is just the language that differs or the whether it is a different tool or concept altogether that they are talking about.

The Logical Framework approach (LFA)

The logical framework (log frame) approach is one of the most widely used tools for project planning, design, implementation, and M & E. It is a useful way of taking ideas and concepts and turning these into a logical design or 'map' for a project. Log frames are usually (although not always) developed at the beginning of a project during the planning phase, and allow you to do the following:

- be clear about what you are trying to achieve and how it will be achieved;
- decide on how you will know if you are achieving your objectives and put in place a system to monitor this;
- be clear about the conditions outside of the project – beyond our control – that are needed for it to succeed, or those that may pose a threat or be a risk for the project.

In this section we will look briefly at the LFA process and what a log frame looks like, to provide you with a basic understanding of these concepts. This is one of the most commonly-used approaches by most donors and development agencies; it is important to be familiar with the approach, its terminology and uses.

There are several key steps in the LFA process:

1. Establish the general scope or focus of the project. Think about and agree on what the project is aiming to do. What is the problem that needs solving, or what is the situation that the project will improve? Who will benefit from the project? Who are the stakeholders? What funding is available? What geographic area will the project cover? How long will the project run for? What other work is being done on this already? Is it succeeding? Once you have worked through these questions, assess again whether or not the project will be feasible.
2. Agree on the planning framework. Different countries, donors and organisations often have different approaches and language for the way log frames are developed. At the start of the process make sure that all those who are involved are using the same terminology and have the same understanding of the key words and concepts.

3. Analyse the situation of the project. The situation analysis step involves learning as much as possible from a variety of stakeholders about the project context and what local people's needs and interests are, in order to design a relevant project. This step should provide new and wider insights into the situation at hand. This can be done by gathering information and data (you could use some of the methods described below) by employing a number of different methods and approaches. Information used in the situation analysis should include:

- Who are the stakeholders?
- What are the problems and issues?
- What are the visions and opportunities?
- What is the biophysical setting?
- What organisations exist and are involved?
- What infrastructure is there?
- What is the policy, legislative or political situation?
- What is the economic situation?
- What is the social and cultural environment?

4. Develop the project strategy. Now that you have a good understanding of the situation, the project strategy can be developed. This simply involves working out what everyone hopes to achieve and how it will be achieved. The strategy involves working out the 'objective hierarchy', the implementation arrangements, and the resources required. The 'objective hierarchy' is simply a way of describing how all the activities (day-to-day) carried out in a project contribute to the outputs (one level higher) which in turn contribute to achieving the overall project purpose and contributing to the goal. An example is given below in Figure 4, on the next page. A project strategy will only work if it is logical. The project hierarchy consists of:

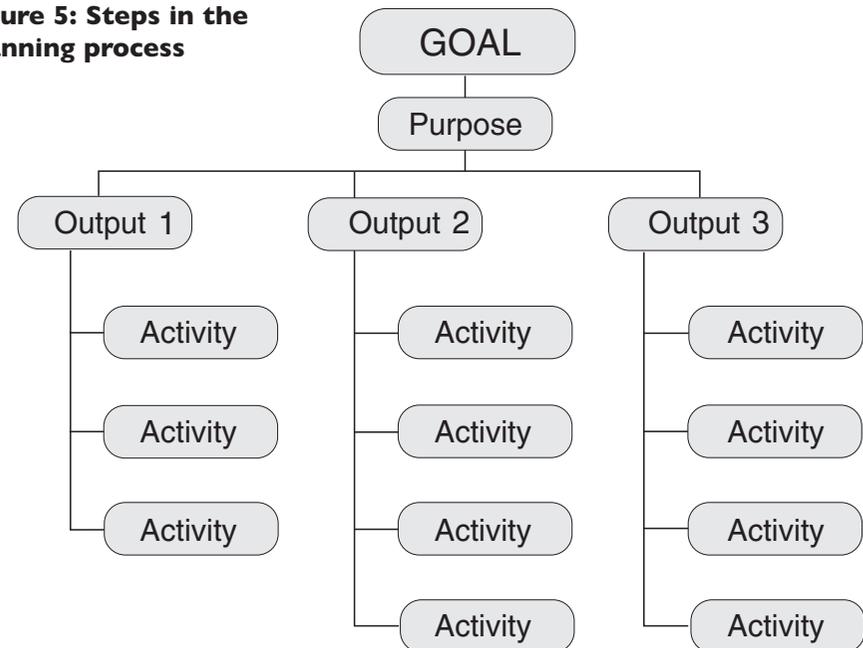
- a) Goal: long-term and highest level impact that the project wants to contribute to (overall or wider objective).
- b) Purpose: what must be achieved by the project to contribute to the goal (usually major positive changes)? Some projects have multiple purposes, some have a single purpose. These are often referred to as project objectives.

- c) Output: what needs to be done to achieve the purpose of the project? What will the project deliver – i.e. the tasks that are completed as a result of activity implementation.
- d) Activities: the actual actions taken or work performed, to produce or achieve specific outputs.

As before, different people may use different terminology. Be sure to clarify what people mean when the language differs to avoid confusion.

5. Identify and analyse the risks and assumptions. This step is the planning process (and you will see it in the log frame) which identifies what all the necessary conditions are, outside the direct control of the project, that need to exist for the project to succeed. For example a project that relies on information being given out through radio programmes needs to be sure that the target audience has access to a radio, i.e. radios are fundamental to the success of this project. This needs to be established during the planning phase to be sure that the project can logically succeed.

Figure 5: Steps in the planning process



6. Develop the log frame (matrix). The log frame is the written result of the above process. A log frame is a matrix or table that usually consists of a number of rows and columns and summarises:

- a) What the project should achieve, from the level of the overall goal down to specific activities (the objective hierarchy).
- b) The measures and indicators that will be used to monitor progress and overall achievements. There may also be targets in this column which give the number, timing, and location of what is to be achieved (measures of achievements).
- c) How these indicators will be monitored or where the data can be found (means of verification).
- d) The assumptions behind the logic of how activities will eventually contribute to the goal, plus the risks for the project if the assumptions turn out to be incorrect (assumptions and risks).

An example of a completed log frame is provided on the next page.

The annual work plan

Once a log frame or other tool has established the project strategy, this needs to be turned into an operational or working document that can guide project staff so that they know what they are expected to do, when and how. A log frame may cover a number of years and will be linked to the annual work plan. The annual work plan is an important tool that guides the day-to-day implementation of the project. It should be accompanied by, and used together with, the project budget. Again, the drawing up of an annual work plan should be a participatory process and involve those who will be using the tool. Different work plans should be drawn up for different levels of the project according to each different group's needs. To develop an annual work plan there are five basic steps:

- 1) Take the activities that form the project log frame and list them in the first column of the work plan. Prioritise them in terms of which activities should be done first. If they need to be further clarified with sub-activities, add these if needed.
- 2) For each activity (and sub-activity) decide and write in the following:
 - What is to be done;
 - Who is responsible;
 - Who will check it is done;
 - When should it be done (start and finish);
 - Resources needed (people, materials, and finances).
- 3) Check that the total cost is within budget for the given time period. Make sure that work loads and time allocated are realistic and consistent.
- 4) Work through the plan with other key stakeholders to ensure shared responsibility and ownership.
- 5) Finalise and distribute the work plan.

This process can be split up across the year into bi-annual, quarterly or monthly work plans. In terms of M & E, the log frame and work plans provide a way to keep a check on what was planned, and to track how performance is proceeding. Targets and indicators help to track the extent to which things are going as planned. Again, both tools should lead to critical reflection and evaluation, and then where necessary, revision and adaptation of plans, approaches and strategies.

Objective Hierarchy	Indicators (measures of achievements)	Monitoring mechanisms (means of verification)	Assumptions and risks
<p>GOAL</p> <p>To assist support organisations and conservancies to promote sustainable development based on sound natural resource management throughout Namibia. <i>(The long term improved situation towards which the project is contributing.)</i></p>	<p>Support agencies and conservancies in place and working on NR management issues</p>	<p>Government gazette, MET and NACSO membership, National CBNRM database</p>	<p>Conservancy policy will be in place and supported. Sufficient capacity and resources exist to support goal</p>
<p>PURPOSE</p> <p>To develop and implement natural resource monitoring and management systems. <i>(The overall observable changes in performance, behaviour or resource status that should happen as a result of the project.)</i></p>	<p>Monitoring and management systems in place and implemented.</p>	<p>MET and NACSO database NR working group reports</p>	<p>Resources will be available to support monitoring and management plans.</p>
<p>OUTPUTS</p> <ol style="list-style-type: none"> 1. Efforts of NRM support agencies co-ordinated and synergised. 2. MET supported to develop and maintain resource data management systems. 3. Systems for conservancy management, monitoring and recording developed and implemented. 4. MET capacity built with own monitoring systems developed and implemented. <p><i>(The products or results that must be delivered by the project for the purpose to be achieved.)</i></p>	<ol style="list-style-type: none"> 1. Joint planning and implementation conducted 2. Resource data management systems in place 3. Number of plans and systems implemented 4. MET monitoring systems being implemented 	<ol style="list-style-type: none"> 1. NR working group and MET staff reports 2. Data management systems 3. Conservancy management plans and monitoring systems 4. MET monitoring systems being implemented 	<p>Support agencies willing to collaborate</p> <p>Capacity for developing systems exists</p> <p>Conservancies are willing to receive assistance and support</p>

Table 5: Example of a log frame

Objective Hierarchy	Indicators (measures of achievements)	Monitoring mechanisms (means of verification)	Assumptions and risks
<p>ACTIVITIES</p> <p>1a. Develop regional natural resource working group teams.</p> <p>1b. Participate in regional CBNRM conference.</p> <p>2a. Develop GIS for use by MET and other partners.</p> <p>3a. Conduct annual audit of NR monitoring data.</p> <p>3b. Assist conservancies to develop annual NR reports.</p> <p>3c. Provide ongoing support for event book implementation in conservancies.</p> <p>4a. Establish training needs of MET/CSD.</p> <p>4b. Provide training to MET.</p> <p>(The actions taken by the project that are required for the achievement of the objectives.)</p>	<p>1a. 4 teams to be in place by March 2004</p> <p>1b. Paper presented at conference</p> <p>2a. GIS application in place & used</p> <p>3a. Completed audits filed documents</p> <p>3b. Completed reports</p> <p>3c. Event book being properly used</p> <p>4a. Training plan produced</p> <p>4b. No. of training events held</p>	<p>1a. Minutes/reports of meetings</p> <p>1b. Conference report</p> <p>2a. Maps and reports</p> <p>3 a & b. Annual reports</p> <p>3c. Event books and reports</p> <p>4a. Training plan</p> <p>4b. Workshop or training event reports</p>	<p>1a. Minutes/reports of meetings</p> <p>1b. Conference report</p> <p>2a. Maps and reports</p> <p>3a. & b. Annual reports</p> <p>3c. Event books and reports</p> <p>4a. Training plan</p> <p>4b. Workshop or training event reports</p>

Data collection tools: Questionnaires and surveys

Surveys and questionnaires are used to gain data from a large number of people in a structured format – based on specific questions – and often in ways that allow for statistical analysis. They allow for focused collection of data and can range from long and complex to short and simple. The two approaches will lend themselves to the collection of different types of data (some more quantitative and some qualitative) that will be analysed in different ways.

Steps:

- 1) Agree on the purpose of the questions.
- 2) Formulate the survey method (the way in which you are going to collect the information) and/or include the design of a questionnaire. The two can be distinguished as follows:
 - The survey process outlines how and where information is going to be collected. It may involve a long questionnaire where specific answers are recorded, or just one

or two simple points that are discussed. Surveys can be carried out face-to-face, via telephone interviews, or be records of observations made by researchers.

Questions can be structured to be 'closed' or 'open'

- A questionnaire is a form with questions printed on it that is used to gather and record specific information from respondent (those who give answers).
- 3) Make sure your questioning is focused and well formulated so that is useful to you. You may consider asking for help or expertise to make sure that questions are worded properly and that they can be analysed properly.

Questions can be structured to be 'closed' or 'open':

Closed questions <i>(that allow 'yes' or 'no' answers and give little useful information)</i>	Open and focused questions <i>(using a series of questions that provide more useful and precise information)</i>
Do you own enough livestock to satisfy your family's needs?	How much livestock do you have? When do you slaughter your stock? When do you sell your stock and why? How do you cope when your livestock is not enough to cover your needs?
How often do you attend conservancy meetings or functions?	Are you a member of the conservancy? How often do the conservancy committee organise meetings? What is the purpose of these meetings? Do you attend these meetings? Why or why not? What do you think of these meetings?

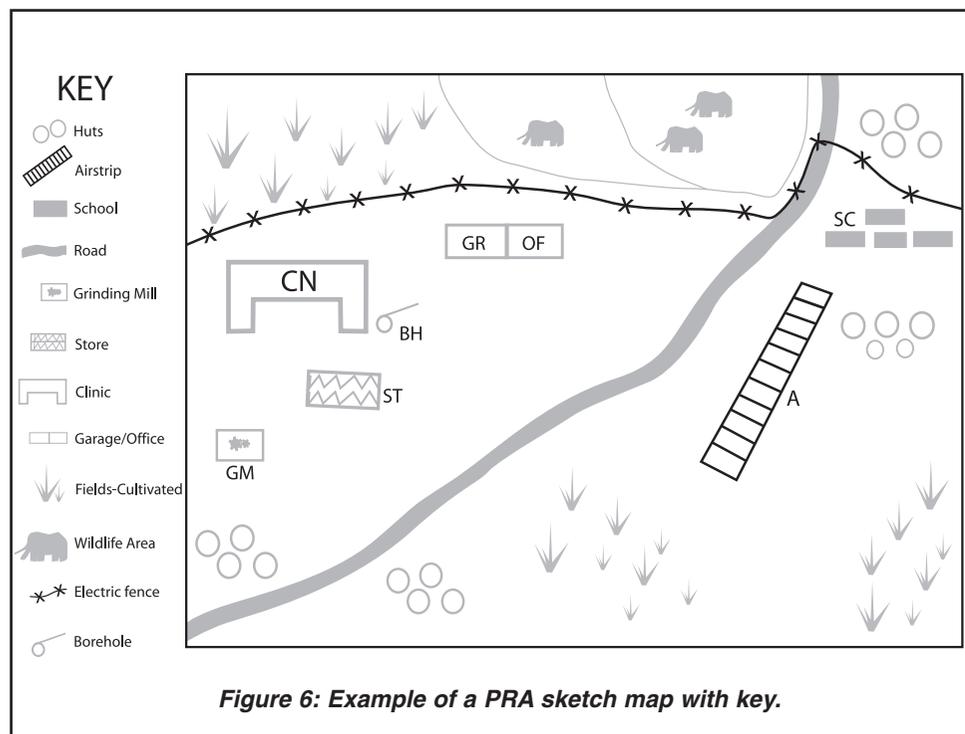
- 4) Decide who should be questioned and how many people should be included in the sample you choose. Also decide on the best way of questioning (leaving forms with people to be filled in later by them, face-to-face interviews, group sessions etc.). You may also need to train the interviewers (often referred to as 'enumerators') so you are sure that they understand the purpose of the survey and have sufficient skills to ask questions and record answers without bias.
- 5) Pre-test your interview questions to make sure they are appropriate and provide the type of answers that you want. If they do not, adjust them and pre-test again.
- 6) Collect and analyse the information.

Points to remember:

- Avoid asking too many questions and making the sample size too big.
- Closed questions can be limiting and don't allow for deviations or opinions.
- Choose whether to work with individuals or groups. Sensitive or difficult issues are usually better dealt with at an individual level. When working in groups consider whether those who will be working together trust each other and will be open and honest.

Data collection tools: Mapping (sketch-PRA)

The PRA mapping tool focuses on informal sketch-mapping as a method for gathering information that has some level of geographic distribution. This could be anything from ecological information (such as where certain resources occur) to social information (who lives where), socio-economic information (which households contain a wage-earner) or issues to do with land, health or literacy. This simple method can be used in combination with other methods such as GIS mapping.



Sketch mapping using PRA techniques can be an effective and important participatory assessment method. It provides a visual representation of a stakeholder's perceptions on a certain issue or indicator that is monitored and evaluated. These issues can be:

- physical, e.g. resources and their uses; problem areas; areas of positive change;
- social, e.g. resource access and use (gender, age); health; literacy.

Steps:

- 1) Ask participants to work together to draw the boundaries of the area being discussed. This can be done on paper or using local materials such as sticks, stones, leaves. Let the participants decide which method is best and keep a paper-based record to use for comparative analysis at a later stage.
- 2) Ask participants to draw the outline of the area's features, which could include roads, towns, rivers, property boundaries.

- 3) Then ask the group to add information to the map. This may include information the group considers important and/or the directed information you are seeking. For example, you may ask for all the different households in an area to be drawn and then for some indication to be given as to the relative size of each (again using markers, sticky labels etc.).
- 4) Ensure that the group are all happy with the final result and allow for adjustments and any additional information that may be given.
- 5) This provides a 'base map' that can be used in subsequent meetings to make comparisons. This takes the map from being a data collection tool to also serving as a monitoring mechanism for future use.

Points to remember

- There are lots of options and variations for these maps – be creative yet stay focused on issues that have geographic distribution.
- You may choose to have a series of maps each recording a different type of data to avoid cluttered or overcomplicated images.
- Bear in mind that sketch maps will record how people perceive certain issues or what is of value to them, and may not be as precise or scale-accurate as formal maps.

Data collection tools: Case studies

Case studies can be used to document the life story of a person, or a series of events over time that are related to a certain person, household or conservancy. Case studies can provide insight into the impact of a project. For M & E, case studies can add the qualitative data – a more 'human' and in-depth type of information. It is important to maintain a good balance between pure quantitative data and anecdotal or qualitative data (stories, opinions, feelings).

Steps:

- a) Define the purpose of the case study and the precise information needed.
- b) Decide and document how you are going to select the individuals, households, conservancies or other organisations on which you will base the case study.
- c) Decide how to obtain the information. If you are doing a household case study you may interview several household members and form one study from their answers. If you want to write a case study of a conservancy, identify which people you may need to interview to obtain a good overview.
- d) Develop a checklist or questionnaire that guides your interviews and information collection process. Choose a suitably skilled person(s) to record the information or provide suitable training to personnel to achieve the best results.
- e) Repeat the procedure often enough to keep an up-to-date picture of what changes are occurring. The specific type of information you want to collect will guide how often follow-ups are done.

Points to remember:

- Case studies allow for focused information and a closer 'look' than information gathered through a general survey.
- Case studies can provide the 'human perspective' on data gathered by other methods.
- Using case studies alone may not be considered representative enough, so combine them with other methods (e.g. with surveys that cover a larger, more representative sample).
- Case studies can be gathered by a number of methods such as traditional storytelling, or other informal ways of communicating issues and values.

NGOS and M & E

CBNRM NGOs are support organisations; their purpose is to aid the government and communities in the implementation of CBNRM policy and legislation. NGOs usually get their funding from donor organisations. Funding is obtained by submitting a detailed project proposal that clearly outlines the activities that will be undertaken.

Part of the agreement between a donor and an NGO will stipulate certain monitoring, reporting and evaluation requirements. Information obtained by project monitoring may feed into national-level monitoring and sometimes components of it could be useful at CBO level as well.

How do community based organisations monitor their management?

Any community-based organisation is required to monitor finances. Often a CBO will obtain a start-up grant from a donor organisation. Conditions attached to such a grant usually involve monthly financial summary statements. Once a CBO starts earning income from community-based enterprises, it is essential that it monitors all income and expenditure. CBOs generally keep grant funds in a separate bank account from that containing income earned from activities or enterprises.

In the case of a conservancy, monitoring usually begins once the conservancy is registered. After registration, the conservancy will initiate a series of management activities, the components of which need to be monitored. The monitoring of wildlife populations is often one of the first forms of monitoring to be initiated. This is because many of the management decisions that the conservancy committee is required to make are based on this information. (See Chapter 5 for information on one particular conservancy monitoring tool, the 'event book system' used in Namibia.)

How is compliance monitoring done in community-based organisations?

Community-based organisations have to meet certain requirements set by the government. For example, a community that registers as a conservancy and carries out trophy hunting has to record and submit data on all trophy animals hunted. Their failure to do so could mean that quota applications for further trophy hunting would not be approved. This form of monitoring – compliance monitoring – would therefore primarily be for reasons of compliance, rather than purposes of management.

Component	Components of Monitoring	Reporting to Donor	Frequency
Financial performance (inputs)	<ul style="list-style-type: none"> – Annual budgets – Monthly financial returns 	Summary expenditure reported against budget	Quarterly
		Audit reports	Annual
Project implementation performance (outputs)	<ul style="list-style-type: none"> – Annual work plan – Quarterly work plans – Monthly staff reports – Quarterly section reports – Annual staff reports 	Outputs and activities reported against work plan Training tables	Bi-annual
Project outcomes	<ul style="list-style-type: none"> – Monthly staff reports – Quarterly section reports – Annual staff reports – Monthly conservancy reports 	Technical report of achievements against objectives	Bi-annual
Project impacts	<ul style="list-style-type: none"> – Reports as listed above – Conservancy management profiles – Annual game counts – Staff evaluations 	Monitoring matrix	Bi-annua
Project evaluation	<ul style="list-style-type: none"> – All available project data a and reports – Data collected by evaluation team 	Formative evaluation report	Year 2 of a 5 year project cycle
		Summative evaluation report	At the end of the 5 year project.



Case studies can supply the human story behind data collected by other methods

Acronyms used in this manual

AGM	Annual General Meeting
AA	Appropriate Authority
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources (Zimbabwe)
CBD	United Nations Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CBO	Community-Based Organisation
CBT	Community-Based Tourism
CECT	Chobe Enclave Conservation Trust (Botswana)
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
DC	District Council, later R (rural) DC, (Zimbabwe)
GIS	Geographic Information System
GMA	Game Management Areas (Zambia)
HG	Holistic Goal
*HM®	Holistic Management
LIRDP	Luangwa Integrated Rural Development Project (Zambia)
M & E	Monitoring and Evaluation
MEA	Multinational Environmental Treaty
MET	Ministry of Environment and Tourism (Namibia)
NACSO	Namibian Association of Community-Based Natural Resource Management Support Organisations (NGO)

NRM	Natural Resource Management
NTF	Non-Timber Forest
PAC	Problem Animal Control
PAM	Problem Animal Management
PAR	Problem Animal Reporting
PRA	Participatory Rural Appraisal
RDC	Rural District Council (Zimbabwe)
SADC	Southern African Development Community
SLNP	Southern Luangwa National Parks (Zambia)
TA	Traditional Authority
TBL	Triple Bottom-Line framework
UNCED	United Nations Conference on Environment and Development
USP	Unique Selling Point
VAG	Village Action Groups (Zambia)
VDC	Village Development Committee (Botswana)
VIDCO	Village Development Committee (Zimbabwe)
WADCO	Ward Development Committee (Zimbabwe)
WMA	Wildlife Management Area (Botswana)
ZAWA	Zambian Wildlife Authority

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The WWF Wildlife Management Series provides information and guidance to members of communities involved in the management of natural resources. These booklets are linked to training programmes being undertaken by organizations supporting Community Based Natural Resources Management in Southern Africa.

Some of the booklets in the Wildlife Management Series include:

- Human Wildlife Conflict
- Problem Animal Reporting
- Quota Setting



WWF *for a living planet*®

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.

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