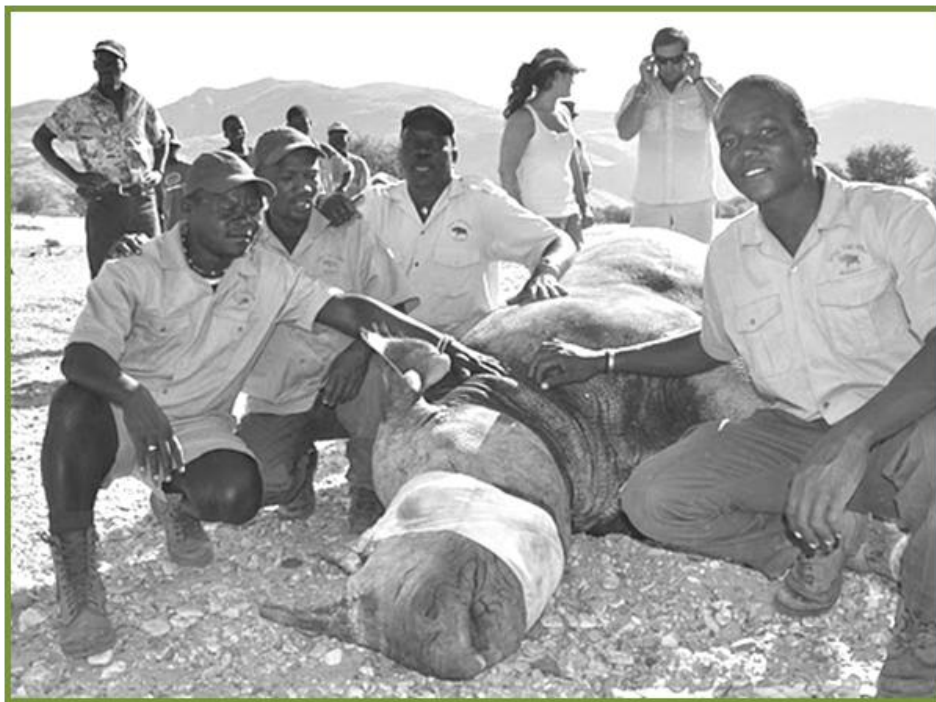


NATURAL RESOURCE MANAGEMENT TRAINING

Module 3.10: **NATURAL RESOURCE MANAGEMENT**



ACKNOWLEDGEMENTS

The materials used to develop this training module were developed and compiled by a number of individuals and organisations over the past 15 years as part of the Namibian CBNRM Programme. Acknowledgement is thus given to all contributing NACSO members, NACSO's international development support partners, and the individual and collective experiences of the NACSO members and partners who made the production of this module possible. The further development of the training material has been made possible with support from MCA Namibia.



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GENERAL TRAINING TIPS

Preparation:

- Prepare each session in advance and ensure all necessary materials and visual aids are available (use visual aids wherever possible to enhance your training).
- Be aware of local customs – remember to open and close the training day with a prayer and give due recognition to any traditional leaders present.
- Provide translation services where necessary (this will need to be arranged in advance – it may not be appropriate to ask a participant to translate).

General training and presentation guidelines:

- Use good time management to ensure every aspect of your training is completed – but take into account the possible need for translation and be prepared to slow down if necessary to ensure that all participants understand.
- Maintain good eye contact with participants.
- Speak clearly.
- Keep your training language simple and appropriate to your audience.
- Bridge one topic to the next.
- Provide clear instructions for activities and check to see if your instructions are understood.
- Where appropriate, summarise each component of the module.
- Avoid reading from this trainer's manual.

Visual presentation:

- Write clearly and boldly if using flipchart sheets.
- Keep your visual aids clear – avoid blocking participants' view of visual aids.

Involving the participants:

- Encourage questions and participation.
- Ask questions to get participants thinking about the topic and key issues.
- Keep the group focused on the task, but take breaks if participants are tired and losing concentration – be aware of body language.
- Be patient and courteous with all participants.
- Talk to your participants and not to the flipchart.
- Acknowledge the comments and feedback from participants.



NB: Where we wish to indicate that text in this module refers to an activity that training participants are expected to undertake, we have employed this little icon.



ABOUT MODULE 3.10: NATURAL RESOURCE MANAGEMENT

OBJECTIVES: People who receive training in MODULE 3.10 will gain knowledge on:	<ol style="list-style-type: none"> 1. What is meant by natural resource management (NRM) 2. Why natural resource management is implemented 3. How natural resource management is implemented
COMPETENCIES: People who receive training in MODULE 3.10 will be able to:	<ol style="list-style-type: none"> 1. Understand adaptive management and its use in NRM 2. Assess monitoring results in relation to objectives 3. Understand how appropriate decisions about management activities are made
MODULE 3.10 is intended for:	The Conservancy Committee, senior community members, traditional authorities, joint venture partners, managers, learners in schools, wildlife clubs
Duration of MODULE 3.10:	The training for this Module will usually last about 5 hours (i.e., <1 day) although specific sections may be expanded to meet the needs of the participants at a given workshop

To train this MODULE 3.10 you will need to have (enough for everyone):	Check
Flipchart stand, sheets and different coloured marker pens ("kokies")	✓
Paper and pens for participants	
Pre-cut pieces of card (five per participant) and PresStick	
Prepared Flipchart Sheets #1 – #3 if you prefer to use them (can be laminated for duplicate use)	
Handouts #1– #12	

The training of this MODULE 3.10 will generally follow this schedule:

TOPIC 1:	Why do we need CBNRM?
TOPIC 2:	How is NRM implemented?



KEYWORDS and ACRONYMS for this MODULE

CBNRM	Community-based natural resource management
CCGs	Community Game Guards
EBMS	Event Book monitoring system
HWC	Human wildlife conflict
MET	Ministry of Environment and Tourism, Namibia
Natural resource management	A collective term for the benefits that are gained through the management of wildlife as a selected form of land use
NGO	Non-governmental organisation
NRM	Natural resource management
WMUP	Wildlife Management and Utilisation Plan

NOTE TO TRAINERS/FACILITATORS: HOW TO USE THIS TRAINER'S MANUAL

The content of the two Topic chapters has been divided into 'sessions', with amounts of time allocated to each. These time frames are a guide only, and trainers/facilitators might need to adapt them as they deliver the Module.



INTRODUCTION

- 1** **LIST:** The **objectives** of Module 3.10, Natural Resource Management, by writing them on a flipchart sheet. To save time you may prefer to have Flipchart Sheet #1 prepared in advance (or even laminate this one and the ones that follow for duplicate use). Explain all the objectives to the participants.

Participants attending this training will gain knowledge on:

1. What is meant by natural resource management (NRM)
2. Why natural resource management is implemented
3. How natural resource management is implemented

- 2** **LIST:** The **competencies** of Module 3.10 by writing them on a flipchart sheet.


People who receive training in Module 3.10 will be able to:

1. Understand adaptive management and its use in NRM
2. Assess monitoring results in relation to objectives
3. Understand how appropriate decisions about management activities are made

ASK: Participants if they have any questions about the Module objectives and competencies and address any questions.

NOTE: If participants are unfamiliar with the concept of natural resource management, you may wish to start the training by discussing in general terms what we mean by natural resource management, and why it is relevant in the context of rural communities.

ASK: What do we mean by 'natural resource management' (NRM)?

- 3**  Ask the participants to consider this question and then ask them to offer some suggested answers. Write the first few participants' contributions on flipchart sheet under the heading 'What do we mean by natural resource management (NRM)?' and then ask other participants to add their contributions, which you should also write on the flipchart sheet.



4 EXPLAIN:

- 'Natural resource management' is a collective term for the **management of natural resources, including wildlife**.
- 'Community-based natural resource management' (**CBNRM**) is an **approach to conservation and rural development** that recognizes the rights of local people to manage and benefit from the management and use of natural resources.
- Access and use rights are returned to communities who are **legally empowered to manage and benefit from the sustainable use** of various natural resources.

5 SUMMARISE/LINK: The purpose of this training Module is to provide an understanding of natural resource management, in order to help us to understand how conservancies use knowledge from training and monitoring to make good decisions about how best to manage their natural resources.

In the first topic we will look at how natural resources are threatened, and conservation measures for protecting natural resources. We will also look at why natural resources are important to the community, and especially the rural community. But before we move on, does anyone have any questions?



TOPIC 1: Why do we need CBNRM?

Session 1: How do we conserve our natural resources? (*Approximately 30 minutes.*)

NOTE: The aim of this first topic session is to get participants thinking about the **loss of natural resources, and how their conservation can be achieved.**

ASK: What causes losses of natural resources?



Participants should take part in a brainstorming session about **what could cause the loss of natural resources**. Make two columns on a flipchart sheet. Record responses to the question in the left-hand column under the heading 'Causes of natural resource loss'.

EXPLAIN:

1. One of the main reasons that numbers of wild animals and plants have declined in all parts of the world is **habitat loss**.
2. Other causes include **over-utilisation, illegal hunting/gathering, competition for resources** and **pollution**.

ASK: What is needed for conservation of natural resources?



Participants should take part in a brainstorming session about **what natural resource conservation requires**. Record responses to this question in the right-hand column of the flipchart sheet under the heading 'Conservation needs'.

EXPLAIN:


1. Conservation requires:
 - More habitat.
 - Reduced negative impacts.
 - Active rehabilitation (sometimes).
2. CBNRM can address these conservation needs by:
 - Changing attitudes.
 - Providing benefits to communities.
3. This leads to:
 - Habitat being reserved specifically for wildlife.
 - A reduction in negative impacts on natural resources.
 - Increased tolerance for wildlife.



Session 2: How can CBNRM unlock the value of natural resources?

(Approximately 50 minutes.)


ASK: What do rural communities need?

- 1  Ask participants as a group to consider this question, and then ask for participants to suggest answers while the rest listen and comment. Once the participants appear to be reaching consensus, draw a 'mind map' similar to the one below, using participants' suggestions to complete the graphic (if participants miss out any of the components given below, you can gently prompt them; on the other hand, it is possible that they will come up with some things that their community needs that are not indicated in the graphic below – you should add these to the mind map).



NOTE: Retain this mind map and display it in a prominent place throughout the rest of the workshop so that participants can refer to it.

ASK: How can natural resources meet these community needs?

- 2  Refer participants back to the mind map they created in Step 1 of this session. Ask participants to think about each of the items that make up their community's needs. Taking each of the needs in turn, ask participants to list the natural resources that could contribute to the various livelihood requirements. Write their suggestions on a flipchart sheet under the relevant headings (i.e., the names of each of the identified needs). The final set of contributions should be similar to the following:



LIST:

1. **Food:**
 - Meat from trophy hunting, own-use hunts and harvesting wildlife sustainably.
 - Veld foods.
 - Human wildlife conflict (HWC) mitigation, leading to increased productivity.
 - Conservation farming.
2. **Grazing for livestock:**
 - Range management reduces over-grazing and damage to veld.
 - Communal herd management.
 - HWC mitigation, leading to fewer losses.
3. **Building materials:**
 - Sustainable timber harvesting and processing.
 - Thatching grass harvesting.
4. **Medicines:**
 - Sustainable harvesting of medicinal plants.
5. **Household items:**
 - Sustainable plant harvesting.
 - Sustainable harvesting for skins, horns and other wildlife products.
6. **Fuel:**
 - Sustainable harvesting of wood (especially encroaching species) for charcoal manufacture.
 - Sustainable firewood harvesting.
7. **Income:**
 - Trophy hunting.
 - Shoot and sell hunting.
 - Live capture of wildlife for sale.
 - Tourism.
 - Craft sales.
 - Timber sales.
 - Wood sales.
 - Plant product sales.
 - Sale of carbon credits (in the future).



8. **Employment:**

- Trophy hunting.
- Tourism.
- Crafts.
- Timber harvesting and processing.
- Plant harvesting and processing.

9. **Development:**

- Services: schools/clinics/conservancy infrastructure, which serve as 'civic centres' etc.
- Skills development through CBNRM programmes.
- Infrastructure development facilitated by CBNRM.
- Transportation resources provided by CBNRM.
- External capital attracted by CBNRM programmes.

10. **Traditions and culture:**

- Use of natural resources for traditional events.
- Natural resource education for children.
- No loss of traditional skills (through natural resource utilisation).

3 **SUMMARISE/LINK:** This topic has explored the loss of natural resources and the methods necessary for their conservation, as well as the needs of rural communities. It has shown how sustainable use of natural resources can provide a variety of benefits to people and – by giving value to natural resources – promote conservation.


The next topic looks at how natural resource management can be realised. Before we go on to Topic 2, does anyone have any questions?

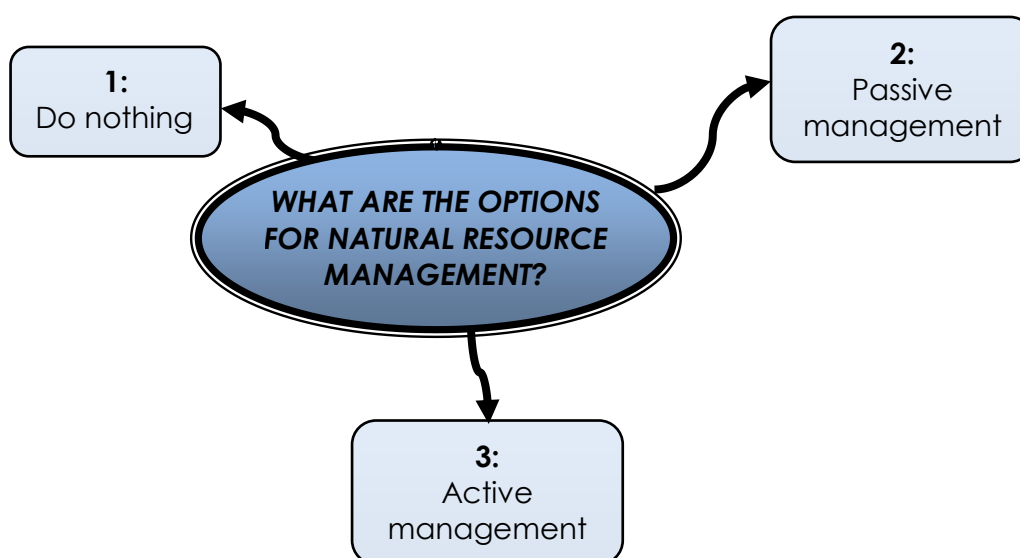


TOPIC 2: How is NRM implemented?


Session 1: Options for natural resource management (*approximately 20 minutes.*)

ASK: What options are there for managing natural resources?

1  Ask participants to suggest what comprises natural resource management and what options there are to implement it. Guide the discussion by drawing the following diagram on a flipchart sheet:



ASK: What do these three options mean?

2  Participants should say what they think is meant by the three options indicated on the diagram you have just drawn. On the diagram under each option, summarise its meaning based on the suggestions of the participants.

EXPLAIN:

1. Doing nothing:

- Simply carry on with what is happening now (*status quo*).

2. Passive management:

- Stop negative practices (e.g., poaching).
- Utilise whatever is available.
- Monitor.
- Plan.
- Wait for investors.




3. Active management:

- Land-use zonation.
- Game introductions.
- Active law enforcement (e.g., patrols).
- HWC mitigation.
- Water protection/development.
- Monitoring data used for management decisions.
- Active marketing to investors.

Session 2: Active adaptive management (*approximately 20 minutes*).

ASK: Which of the management options that were discussed in the last session do you think will be best for making the most of the natural resources in the area and getting the best returns?

- 1**  Ask the group to think about this question and then ask for 'votes' for each of the three options. Record results on a flipchart sheet.

Ask participants to suggest for reasons for selecting the 'winning' option. 

2 EXPLAIN:

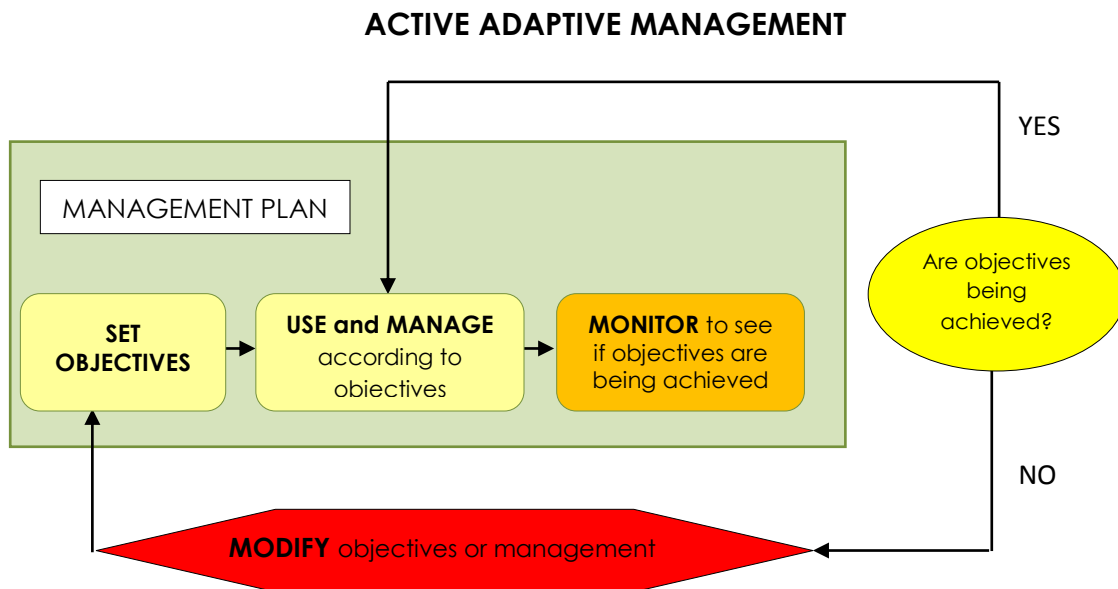
1. If communities are to benefit from their natural resources well into the future, it is **not enough to simply use these resources** (do nothing) as a lack of ownership (rights to use the resources or make decisions concerning the resources, etc.) will ultimately lead to over-exploitation and loss (this is sometimes known as "the tragedy of the commons").
2. It is also **not enough to manage passively** – although the prevention of adverse impacts is important, other management activities are needed to ensure sustainable and meaningful benefits from natural resources.
3. The practical option for natural resource management is one that is now adopted as a matter of course by wildlife managers in protected areas and conservancies alike. It is known as **active adaptive management**.

- 3** **DISTRIBUTE:** Handout #1: 'Background to active adaptive management'. Give participants time to look at the explanatory diagrams in Handout #1. (**NOTE:** this subject is important as it forms the basis for all decision-making for good NRM management. Other handouts will not be reviewed in such detail.)



4 **EXPLAIN:** Referring to the explanations of blueprint planning versus adaptive management in Handout #1, you can see that the only realistic way to **plan management** is by introducing a **management activity** that you think will achieve your **objective**, **monitoring** what happens and then changing (or continuing) your approach to make necessary improvements.

On a flipchart sheet, go through the principles of adaptive management by drawing the elements of the following diagram (you may prefer to prepare this in advance as Flipchart Sheet #3, which you can even laminate for duplicate use):



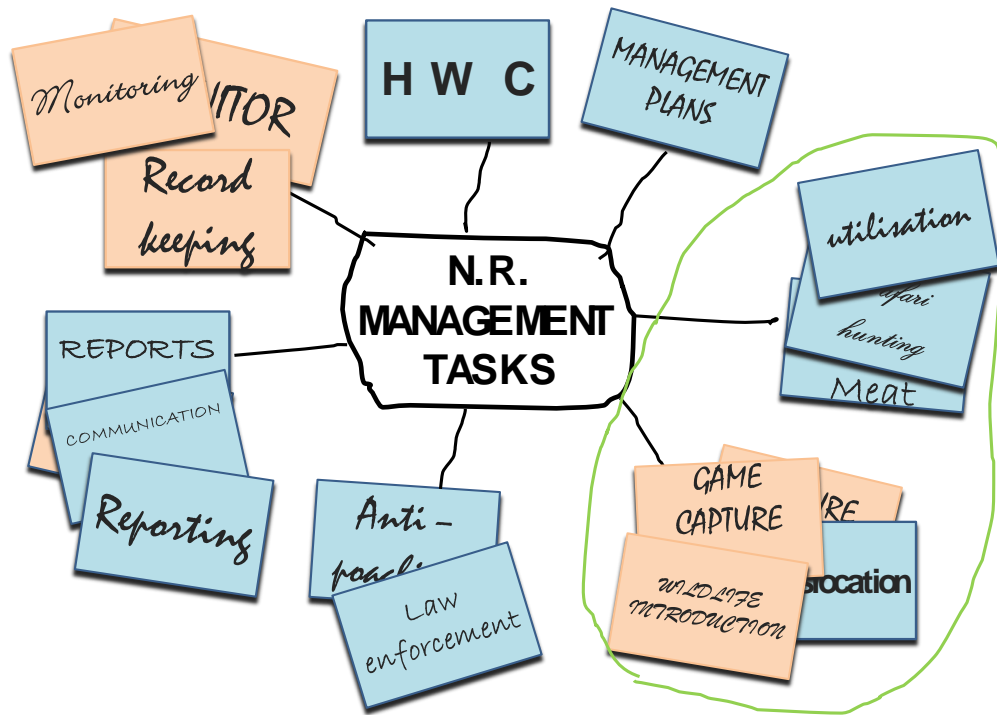
Session 3: Natural resource management activities (approximately 90 minutes).

NOTE: The aim of this third session is to get participants to understand how the **components of active adaptive management allow sustainable utilisation to be effective**.

ASK: From learning about adaptive management, what would you say are the most important tasks needed for natural resource management?

1 In the centre of a flipchart sheet, write 'NR management tasks' in a box. Give the participants five cards each and ask them to write down five activities (one per card) that they think are important in the NRM context. Stick these around the central box, placing similar cards together. At the end of this activity the flipchart sheet will look something like this:





2 **EXPLAIN:** We can break down the components of adaptive management into:

- **Knowledge** (from monitoring, game counts, game value, quotas, and information from other sources – e.g., wildlife biology).
- **Action** (wildlife utilisation – tourism, hunting, capture, quota setting, and human wildlife conflict resolution).
- **Monitoring** (Event Book monitoring system, game counts, and surveys).

3 **EXPLAIN:** You will have noticed in Handout #1 and in the various diagrams on the flipchart sheets that there's a clear need for management planning. The **conservancy Management Plan is the over-arching document that guides adaptive management** by establishing:

- a. The overall vision for the conservancy area and the **objectives** for wildlife management.
- b. The management strategies and **activities** that will be conducted to reach the objectives.
- c. A **monitoring** plan to watch progress towards objectives.



EXPLAIN:

1. It is intended that conservancies will all ultimately develop Integrated Ecosystem Management Plans (IEMPs). These are composed of a number of individual management plans covering a variety of organisational needs, which together will enable effective management of all aspects of conservancy management. (**NOTE:** This is the subject of a separate training course, 3.7 'Management Planning and Zoning'.)
2. One of the first components of an IEMP is the Wildlife Management and Utilisation Plan (WMUP) which is obviously the most important plan for natural resource management.

DISTRIBUTE: Handout #2: 'Wildlife management and utilisation planning'.

3. Notice that the WMUP is designed to enable adaptive management to take place and therefore has the same components –objectives, activities and monitoring.
4. Without proper planning, little or nothing can be achieved properly and efficiently. So even though it may be decided that **active management** is best for the area, with a number of activities put in place, the relevant activities need to be conducted in a logical order, at set times, or in a particular manner. The conservancy Management Plan enables the managers to organise the work of the conservancy in the most effective and efficient way.

4 **EXPLAIN:** An additional important plan is the **Zonation Plan**, which is usually part of an overall conservancy Management Plan. It is developed by stakeholders, who divide the area into various land uses to maximise the returns from each.

- The Zonation Plan defines boundaries for different land uses and sets rules for each. Zonation can be used to separate wildlife from human activities to reduce competition and conflict, and also to allow wildlife and other natural resources to thrive.

DISTRIBUTE: Handout #3: 'Zonation planning'.

NOTE: Technical and background information and implementation plans are kept separately as appendices and provide more details for conducting the various activities described in the conservancy Management Plan.



5 **EXPLAIN:** The conservancy Management Plan basically puts the theory of adaptive management into reality. Now we need to discuss how **the components are derived in practice.**


1. The **Objectives** are what the conservancy wants to achieve – e.g.: ‘An increase in the benefits from populations of wild animals in the area’.
2. On the basis of **knowledge**, the conservancy managers decide what will be needed to cause the desired increase. For instance, knowledge of **game value** will show the managers which are likely to be the most profitable ways that wildlife should be utilised in their conservancy.

DISTRIBUTE: Handout #4: ‘Game value’.

EXPLAIN: Suppose the managers at a conservancy have decided that they will be able to maximise the returns from wildlife (as stated in the ‘Objective’ example, above) best by obtaining rhinos (for tourism) and trophy hunting other antelope in their area. They will need to know something about the biology of these species to make sure there are suitable habitats for them and decide whether they are the right sort of species to live in the area.

DISTRIBUTE: Handout #5: ‘Wildlife biology’.

ASK: What sort of activities can be used to manage wildlife effectively?

6  Ask the participants to suggest wildlife **management activities** and to give reasons why these are likely to be effective. Make a list of these on a flipchart sheet under the heading ‘Wildlife management activities’.

EXPLAIN: Having established that the area is suitable for rhino, the conservancy managers (from our example, above) will then apply to the relevant authorities for rhinos to be captured from an area that has an excess of them, and be introduced into the conservancy. (It could be any other Namibian species at different conservancies.)

- There will be a number of other criteria that will need to be taken into consideration before the decision is made whether to allow animals to be trans-located into the conservancy, or not. This is done via a simple questionnaire the results of which are fed into a computer program that will help with this decision making.

DISTRIBUTE: Handout #6: ‘Game introduction’.



- Armed with knowledge about how often the species in question can breed, how many offspring they can have, as well as the value the animals have, the conservancy managers in our example may decide that antelope trophy hunting is another feasible utilisation option. They will then apply for quotas, which will be based on their knowledge of the population growth rates. (There is a separate training course on this subject: 3.4, 'Quota Setting'.)

DISTRIBUTE: *Handout #7: 'Quota setting'.*

- Wildlife management is also about improving the conditions for wildlife so that they can thrive. Water is often a limiting factor and needs to be carefully managed to enable wild animals to survive and also to reduce competition for water used by people and livestock.

DISTRIBUTE: *Handout #8: 'Water management'.*

- Of course in our example, the returns from wildlife utilisation will be diminished if the rhinos that have been introduced and the trophy animals are poached. Various anti-poaching activities, particularly regular patrols by Community Game Guards, are also an important part of wildlife management.
- In many conservancies there are species that cause serious problems for the people that live there. Predators such as lions, leopards, cheetahs and hyena attack livestock, and elephants damage water supplies and crops. Management Plans will include strategies for dealing with human wildlife conflict so that the damage to people's livelihoods does not outweigh the benefits that can come from wildlife.

DISTRIBUTE: *Handout #9: 'Human wildlife conflict'.*

- There are a number of ways that human wildlife conflict can be reduced, from keeping livestock in protective enclosures at night to putting electric fences around water points. (Human wildlife conflict and its mitigation are the subjects of another training course: 3.6 'Human Wildlife Conflict (HWC) Management'.)

7 EXPLAIN: Monitoring is a crucial part of wildlife management – without monitoring, it is not possible to:

- Know what is going on in the conservancy.
- Follow trends.
- Report information to others.
- Remember details of what happened in previous years.
- Know whether there is progress towards achieving objectives.



EXPLAIN:

1. 'Monitoring' is the term used to describe repeatedly recording information. Anything can be monitored, from maintenance of water pumps to numbers of poaching patrols per month.
2. In conservancies, regular monitoring is done using the Event Book monitoring system (EBMS). This is a paper-based system that enables data collection, data analysis and reporting all to be done at the local level.
3. The EBMS in Namibian conservancies is used to monitor wildlife populations, illegal activities, meetings, and problem animals. The information collected is summarised into 'reporting charts', which are graphical representations of the data, and is reported to conservancy members at the AGM.

NOTE: There is a separate training course on the 'Event Book System', 3.1.

DISTRIBUTE: *Handout #10: 'The Event Book monitoring system'.*

- Wildlife populations are also monitored on a more scientific basis using surveys and counts. Aerial counts are used to gather information about numbers and distributions over very large areas. They cannot be used for counting nocturnal animals or small animals that are difficult to see from the air, however. Aerial counts are very expensive to do and are not done regularly in Namibia.
- Road counts are used every year to count wild animals in conservancies in more than 7 million ha of north-western Namibia. They are done using vehicles driving the same routes at the same time every year. They were first started in 2000 and since 2001 the whole area has been counted annually (over about a three week period). This has become a large operation with almost 300 people taking part from communities, MET, the private sector and support NGOs.
- In the North East, animals are counted along fixed transects (straight lines) by people on foot. These are also done annually and again involve conservancy members, NGOs and MET staff.
- Both of these ground counts provide:
 - a. Estimates of the numbers of animals (for quotas, asset value and drought risk).
 - b. Wildlife distribution maps (for land-use planning, impact of use, farming).
 - c. Wildlife population trends (to assess results of management activities).



DISTRIBUTE: Handouts #11: 'Fixed foot transect game counts in east Caprivi' and #12: 'North West road counts'.

NOTE: Game counting is the subject of another separate training course, 3.2: 'Game Count Training'.

8 **EXPLAIN:** To remind ourselves of how knowledge, activities and monitoring are related to adaptive management, we will take the example of the introduction of rhinos into a conservancy that we have looked at previously in this training:

1. Using **knowledge** of the biology of rhinos, the conservancy managers had a theory that rhinos would not only survive at the conservancy, but would increase in numbers (and also that they would attract more tourists).
2. The conservancy managers organised a variety of **activities** that made sure that the rhinos would do well – these activities provided water, prevented poaching, and controlled fires.
3. The conservancy managers **monitored** illegal incidents through anti-poaching patrols and sightings of the rhinos when the CGGs were on patrol. They kept records of the numbers of tourists that came to see the rhinos. They also monitored the numbers of rhinos seen during the annual road game counts and saw that the population was getting larger.
4. The conservancy managers decided to continue with the activities that they had been conducting because they were achieving their **objective** of increased numbers of rhinos and increased numbers of tourists.
5. In another example of adaptive management, a population of oryx was being hunted for meat for the community (objective: sustainable supply of meat for everyone). The quota was 10 per cent per annum (theory: 10 per cent was a sustainable off-take). Monitoring showed that the number of animals was decreasing. It was decided that the 10 per cent off-take was too much and the quota was reduced. Over the following few years, the population remained the same size. This meant that the new quota was correct.

9 **SUMMARISE/LINK:** This topic has looked at options for NRM, and at active adaptive management of natural resources. We have investigated the three components of adaptive management (knowledge, actions/activities and monitoring) and how they underpin conservancy Management Plans. We have now finished our short training on natural resource management. Does anyone have any final questions for me?



List of Handouts that you should make available for this Module

MODULE 3.10, HANDOUT #1: Background to active adaptive management

MODULE 3.10, HANDOUT #2: Wildlife management and utilisation planning

MODULE 3.10, HANDOUT #3: Zonation planning

MODULE 3.10, HANDOUT #4: Game value

MODULE 3.10, HANDOUT #5: Wildlife biology

MODULE 3.10, HANDOUT #6: Game introduction

MODULE 3.10, HANDOUT #7: Quota setting

MODULE 3.10, HANDOUT #8: Water management

MODULE 3.10, HANDOUT #9: Human wildlife conflict

MODULE 3.10, HANDOUT #10: The Event Book monitoring system

MODULE 3.10, HANDOUT #11: Fixed foot transect game counts in east Caprivi

MODULE 3.10, HANDOUT #12: North West road counts

Please make sure that you make enough copies for each trainee.



NOTES



