

# **SOUTHERN AFRICA REGIONAL ELEPHANT CONSERVATION AND MANAGEMENT STRATEGY**

Prepared following a SADC Workshop

27 - 29 May 2005

Victoria Falls, Zimbabwe

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## FOREWORD

In the last twenty years or so the southern African region has witnessed a massive growth of the African elephant (*Loxodonta africana*) populations to the extent that the 10<sup>th</sup> Conference of the Parties to the Convention on International Trade in Endangered Species of Fauna and Flora, which took place in Harare in June 2007, saw the justification for split listing the populations of Botswana, Namibia and Zimbabwe under Appendix II. The South African elephant population was down listed to Appendix II at CITES CoP 12 which took place in Chile in November 2002. Other countries within the region such as Zambia and Tanzania also wish to have their populations down listed from Appendix I to Appendix II. Populations in Malawi and Mozambique are on the increase. The Botswana population which stood at 40 000 in 1980 is growing at a rate of 5.7% per year. The Zimbabwe elephant population is growing at a rate of 5% per year. This tells the story of a healthy and rapidly increasing elephant population within southern Africa. The elephant population is not evenly distributed within the region. It forms localised densities. In Botswana, concentrations in excess of 12 elephants per sq. km take place along the Linyanti and Chobe Rivers. At the current rate of growth the elephants numbers are expected to exceed 500 000 by 2020 which could result in detrimental impact on the vegetation.

Large elephant populations constitute a management nightmare for wildlife conservation agencies. The high populations pose a threat to biodiversity conservation through habitat modification and degradation. Human-elephant conflicts are also on the increase. There are two schools of thought on how to manage these elephant populations. There are those who advocate for only the use of none lethal approaches. The second school of thought sees no problem with the use of both lethal and nonmethods. The different approaches are based on different value systems. What is critical is that the realities of communities who bear the brunt of living with the elephant on a daily basis need to be taken on board. Any value systems adopted must reflect this reality.

This regional elephant management strategy will guide the conservation and management of elephants in the southern African region. The strategy was developed from a regional workshop in which stakeholders representing the wildlife industry, technocrats, inter and non-governmental organizations and wildlife producers, actively participated. The regional strategy is informed from the need to develop a framework for the region to manage a transboundary elephant population. The countries also face similar challenges in managing the growing elephant population. The Terms of Reference for the development of the strategy were developed at one of the annual African Wildlife Consultative Forum (AWCF) meetings. The AWCF is a joint forum for the Directors of Wildlife Conservation Agencies, Representatives of Safari Operators, conservation NGOs and representatives of community groups. The AWCF is funded by the Safari Club International Foundation.

The AWCF set up a Task Force which was chaired by Zimbabwe to develop the strategy guided by the Terms of Reference. IUCN-ROSA was requested to provide technical assistance. The Southern Africa Elephant Management Task Force completed the task at the end of 2006 and the strategy was adopted by Ministers responsible for wildlife management within the SADC in April 2007 two months prior to the 14th Conference of Parties to CITES which was held in The Hague in June 2007.

Dr M.Z. Mtsambiwa  
Chairman  
Regional Elephant Management Task Force.

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## ACRONYMS

AfESG	African Elephant Specialist Group
AWCF	African Wildlife Consultative Forum
CBD	Convention on Biological Diversity
CBNRM	Community based natural resources management
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
ELM	Environment and Land Management
ETIS	Elephant Trade Information System
FANR	Food, Agriculture and Natural Resources of SADC
HEC	Human-elephant conflict
MEA	Multilateral Environment Agreement
MIKE	Monitoring the Illegal Killing of Elephants
NEPAD	New Partnership for Africa's Development
PRSPs	Poverty Reduction Strategy Papers
SADC	Southern African Development Community
TBNRM	Trans-boundary Natural Resources Management
TFCA	Trans-frontier Conservation Area
UNCCC	United Nations Convention on Climate Change
UNCCD	United Nations Convention to Combat Desertification
WSSD	World Summit on Sustainable Development

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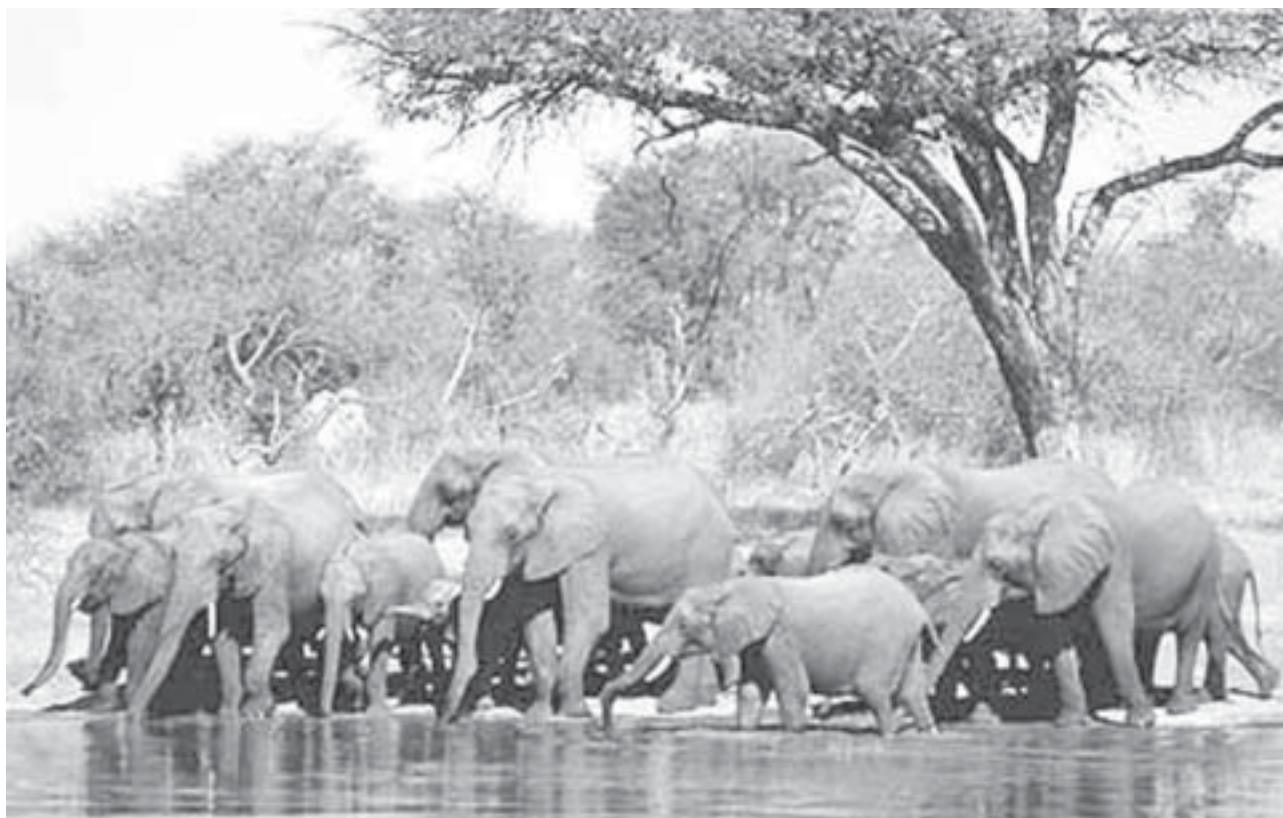
## 1. Introduction

Over the past century in southern Africa, elephant conservation has been notably successful, with elephant populations recovering from a few thousand to an overall regional population of around 250 000 – 300 000 animals. Furthermore, these increasing populations show little sign of stabilizing and their growth continues at about 5% per annum. As elephant populations have grown, so too have those of humans, with accompanying substantial increases in land area under cultivation. The compression of increasing numbers of elephant into limited range has resulted in greater pressure in habitats in protected areas and increasing conflicts with rural farmers outside these protected areas.

The African Wildlife Consultative forum (AWCF), a consortium of African State Wildlife Agencies and key stakeholders have agreed on the need for Southern African elephant range States to develop a regional conservation and management strategy. This follows repeated observations and concerns by range States and others over the growing elephant population in the region, and its increasing impacts on people, habitats and biodiversity.

Whilst some elephant range States have relatively low elephant population numbers, and others high numbers, the development of a regional strategy is justified on the basis that:

- Most elephant key populations are shared and move across international boundaries;
- Populations are not evenly distributed across the different range States; and
- Importantly, there is a set of issues and concerns common to all range States.



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## 2 Policy Background

### 2.1 WSSD, PRSPs and Environment

One of the main outcomes from the World Summit on Sustainable Development (WSSD) is the recognition that sustainable natural resources management is essential for lasting poverty reduction. Furthermore, commonly based approaches, including CBNRM, are amongst the most effective to combat such poverty. Important country contributions to poverty reduction are their Poverty Reduction Strategy Papers (PRSPs). Whilst the degree of mainstreaming environment in individual PRSPs is variable, there is a general recognition that the (rural) poor are often the group most dependant on natural resources and that environmental degradation and conflicts over resource use most often will impact this group. Importantly, for example, the Malawi PRSP summary states that “.... *Strategies should include strengthening legal and institutional framework to encourage local communities to control and sustainably manage natural resources, developing alternative livelihood strategies and creating environmental awareness....*”

### 2.2 NEPAD

The New Partnership for Africa's Development (NEPAD) is premised on poverty eradication and sustainable growth and development. One priority sector identified for urgent action is the Environment Initiative. NEPAD's action programme notes that poverty reduction depends on “*healthy and good stewardship of the environment*” and one important goal is “*to implement national strategies for sustainable development by 2005 so as to reverse the loss of environmental resources by 2015*”. The Environment Initiative targets Combating Desertification, Global Warming, Cross-border Conservation Areas and Environmental Governance, amongst others, as priority interventions.

### 2.3 SADC

SADC member States have committed themselves to the implementation of major Multilateral Environment Agreements (MEAs), such as the United Nations Convention on Climate Change (UNCCC), the United Nations Convention to Combat Desertification (UNCCD), the Convention on Biological Diversity (CBD) and the Ramsar Convention. The CBD articles support the sustainable use of wild natural resources as a means to achieving conservation and development. Notably however, continuing land degradation and loss of biodiversity can be largely attributed to rising levels of poverty where the rural poor are both victims and agents of environmental degradation.

### 2.4 RISDP

Within SADC, the Regional Indicative Strategy Development Plan (RISDP) is a 15 year regional integration framework, setting the priorities, policies and strategies for achieving the long term goals of SADC. It provides guidance to Member States, regional stakeholders and international partners in achieving these goals.

Contained in the RISDP and of relevance to AWCF elephant management strategy, is the Food Agriculture and Natural Resources (FANR) cluster which *inter alia* includes cooperation on Environment and Land Management (ELM), Forestry and Wildlife. Key wildlife strategies include promotion of CBNRM, TFCAs, common management practices, sustainable wildlife utilization and capacity building. Specifically, Article 8 Information Sharing, Article 9 Cooperation in Wildlife Law Enforcement and Article 10 Capacity Building for



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Effective Wildlife Management contained in the Protocol on Wildlife Conservation and Law Enforcement are all directly linked to the strategic purpose and objectives of elephant management strategy.

Challenges to the wildlife sector identified in the RISDP include the need to strengthen regional interventions to curb illicit wildlife use and trade and the lack of programmes covering long term viability of wildlife based tourism. The coordination of a common position on CITES will be of importance as well as the implementation of TFCA/TBNRM programmes.

## **2.5 CITES**

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) governs international trade in endangered species and their products. Sustainable use of endangered species continues to be contested at Conference of Parties, but is now accepted through the adoption of the Addis Ababa Principles on the Sustainable Use of Biodiversity. These are given in full in Appendix 1.

Southern African range States are contributing to two important initiatives of CITES, namely the Monitoring of Illegal Killing of Elephants (MIKE) and the Elephant Trade Information System (ETIS). Range States continue to pursue common positions at CITES CoPs.

## **2.6 National Environmental Policies and Acts and Biodiversity and Species Conservation Strategies and Action Plans**

Most if not all, southern African countries have overarching national environmental policies and acts, sector specific policies and acts (e.g. wildlife, forestry, water, fisheries) and plans such as National Environment



Action plans and Biodiversity Strategy and Action Plans. In these policies and action plans, equal emphasis is placed on biodiversity conservation, sustainable use and community benefits from natural resources. Five elephant range States have specific policies, strategies and/or plans for elephant management in their respective countries, all of which include the provision of benefits from sustainable use of elephants. These are supported by a generally robust, legal framework.

Importantly for southern Africa, international treaties and conventions, regional and national policy instruments, strategies and legal frameworks all provide clear guidelines and strong support for biodiversity conservation, sustainable natural resource use, including elephants and CBNRM. In some southern African countries, one or more of these elements are written into wildlife law or enshrined in Constitutions.

### **3. Preamble to Strategy**

WHEREAS the Directors of wildlife management authorities of the elephant range States agree to develop and implement a regional elephant conservation and management strategy, and,

RECOGNISING that such a strategy is an outcome of the AWCF established by the range states to facilitate coordination, communication and collaboration in the conservation of elephant populations in the region, and further,

RECOGNISING that,

- i) most elephant populations in the region are expanding;
- ii) under certain specified circumstances elephant populations may need to be reduced;
- iii) taking no action, whilst an option, limits learning.

SOUTHERN AFRICAN COUNTRIES AGREE TO:

1. Share experiences and lessons learned, regarding in particular
  - Management techniques;
  - Human-elephant conflict (HEC) mitigation measures;
  - Community based natural resource management (CBNRM);
  - Indigenous knowledge;
  - Capacity building and sharing of knowledge.
2. Foster appropriate coordination at a transboundary level, regarding in particular:
  - Non conflict and/or complementary land-use planning;
  - HEC mitigation measures;





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- Law enforcement;
  - Management of trophy hunting;
  - Other management offtake exercises;
  - Understanding cross-border elephant movements.

### **3.1 Principles and Values**

The objectives of the strategy will be achieved in keeping with the following set of key principles and values:

- Enhancement &/or maintenance of biodiversity conservation.
- Recognition of the importance of elephants in contributing to existence values, development and sustainable use.
- The importance of clearly stated objectives in realizing the value of elephants, such that management actions are designed to meet these objectives.
- The right to apply singly, or in combination, all of the options available for the management of elephants as contained in the Management Toolbox (Appendix 2).
- The application of adaptive management as a learning tool.
- The importance of humane implementation in management interventions.
- The need for harmonization of management plans and activities across land uses and international boundaries.
- Adherence to the Addis Ababa principles and equitable benefits.
- Realising full sustainable benefits from elephants.

### **3.2 Mode of implementation**

Implementation of the strategy is envisaged through meetings at different levels on both a regular and a need-to basis, through the use of electronic communication, and the use of specific issue-related working groups. Constituted as the Core Working Group, range state wildlife agency Directors (or equivalent) are responsible for implementation of the strategy.

### **3.3 Long term Goal or Vision**

Elephants conserved and their range expanded within historic limits, forming as contiguous a population as possible across southern Africa, thus realizing their full potential as a component of wildlife-based land use for the benefit of the region and its people.

### **3.4 Purpose**

The purpose of the strategy is to facilitate coordination, collaboration and communication in the management of elephant populations across the region so as to realize the long term goal or vision.

### **3.5 Objectives**

#### **3.5.1 Ecological**

- Improve management of elephants in Protected Areas and TFCAs.

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- Enhance biodiversity conservation.
  - Increase the range available to elephant.

### **3.5.2 Social**

- Reduce conflict between elephants and people.
- Enhance the value of elephants.
- Create conditions in which elephants are a benefit to people.

### **3.5.3 Economic**

- Extend elephant range and wildlife as a land use outside Protected Areas.
- Promote NRM as a vehicle for economic and rural development.
- Enable the full economic potential of elephants (and other wildlife) to be realized through sustainable use.

## **3.6 Regional Strategic Activities**

### **3.6.1 Priority needs at the regional level:**

- Assess the limits to &/or extent of public acceptability of various elephant management options through a carefully structured and well coordinated, pre-tested opinions survey design applied uniformly across all countries in that region.
- Use these results as a Public Relations tool nationally and regionally with both internal and external communication elements, and a multi-media approach, including a feature film, on the complexities of elephant management.

#### **3.6.1.1 Opinions/Values Survey**

- Undertake coordinated surveys of large transboundary populations including areas of possible range with the aim of establishing the distribution of elephants in the sub region.
- Individual country governments will prioritise and undertake regular surveys of their own elephant populations.
- Provide assistance to countries with limited capacity to survey elephant populations that are not transboundary in nature.

#### **3.6.1.2 Number & Distribution**

- Undertake coordinated surveys of large transboundary populations including areas of possible range with the aim of establishing the distribution of elephants in the sub region.
- Individual country governments will prioritise and undertake regular surveys of their own elephant populations.
- Provide assistance to countries with limited capacity to survey elephant populations that are not transboundary in nature.



#### **3.6.1.3 Human elephant conflict mitigation**

- Make standard HEC information available at a regional scale.
- Standardize the collection of incident data using AfESG protocols as a model.
- Undertake collation of data at regional level for information dissemination.

#### **3.6.1.4 Source-sink configuration<sup>1</sup>**

- Explore application of management interventions in a source-sink configuration, where the sink can be harvestable if need be.
- Monitor elephant responses to “source-sink” areas in which animals are harvested, especially where the sink might mitigate against, or inhibit range expansion.
- Coordinate activities especially in the three identified “over-populated areas”<sup>2</sup> which involve transboundary components.
- Apply source-sink configurations across national boundaries only where there are equivalent levels of management capacity for cross border harmonization.

#### **3.6.1.4 Transboundary issues**

- Pursue and consolidate viable transboundary conservation areas.
- Explore vigorously, elephant range expansion opportunities.
- Promote a range of tourism activities.

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<sup>1</sup>Source-sink refers to situations, processes or mechanisms in which an area containing an abundant source of elephants is able to populate a less abundant, or unpopulated area of elephants; moreover, if desired, the sink can be maintained through a harvesting regime

<sup>2</sup> Chobe, Hwange, Kruger

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- Harmonize ways of involving meaningfully, communities in TFCAs.
  - Coordinate and improve understanding of elephant movements across borders.
  - Coordinate law enforcements activities.

#### **3.6.1.4 Economic analyses**

- Undertake cost-benefit analyses of realizing the full sustainable benefits of elephants.
- Undertake market studies and values for non-consumptive and consumptive elephant products.
- Apply benefits of elephant use to support conservation objectives and contribute to poverty alleviation.
- Collaborate to remove CITES restrictions to trade in elephant products.

#### **3.6.1.4 Policy framework**

- Harmonize policies.
- Develop and implement agreements/protocols on management of cross border populations.
- Apply current &/or existing policies and other related instruments and protocols.

#### **3.6.1.8 Communications & Public Relations (PR) Strategy**

- Develop effective PR tools and communications strategy to promote decisions taken on regional approaches to elephant management.
- Country governments take the initiative to articulate the strategy to the national population.
- Deal effectively with terminology and the use of appropriate language in dealing with sensitive issues.

#### **3.6.1.9 Transfer &/or sharing of capacity and expertise**

- Encourage the sharing of experiences &/or expertise, skills and knowledge.
- Undertake capacity building and training for product diversification.
- Mobilize key human resources.
- Strengthen capacity and expertise through regular exchange and meetings.

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## Appendix 1. Addis Ababa Principles and Guidelines

Conf. 13.2

Sustainable use of biodiversity” Addis Ababa Principles and Guideline

WELCOMING the adoption at the seventh meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP7), in Decision VII.12, of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity (a summary of which is annexed):

NOTING that these Principles and Guidelines can be utilized in the implementation by CITES Parties of Article IV and other relevant provisions of the Convention.

RECOGNIZING that CBD and its Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) will be working on case studies to test these Sustainable Use Principles and Guidelines;

RECOGNIZING further, that CBD defines, in its Article 2, the term ‘sustainable use’ as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining the potential to meet the needs and aspirations of present and future generations”;

NOTING further that 164 of the 166 CITES Parties are Parties to CBD at the time of the 13<sup>th</sup> meeting of the Conference of the Parties;

WELCOMING further Target 4.3 of the *Strategic Plan: future evaluation of progress* of CBD (Decision VII.30, Annex 2, Goal 4), which states that “No species of wild flora or fauna is endangered by international trade”, and therefore is fully consistent with the CITES Strategic Plan [adopted by the Conference of the Parties to CITES at its 11<sup>th</sup> meeting (Gigiri, 2000)];

RECALLING Resolution Conf. 10.4 and the Memorandum of Cooperation between CITES and CBD;

### THE CONFERENCE OF THE PARTIES TO THE CONVENTION

URGES the Parties to:

- (a) make use of the Principles and Guidelines for the Sustainable Use of Biodiversity, also taking into account scientific, trade and enforcement considerations determined by national circumstances, when adopting non-detriment-making processes and making CITES non-detriment findings;
- (b) share experiences on sustainable use at the national level, particularly between CITES Management and Scientific Authorities, and their CBD Focal Points; and
- (c) endeavour to ensure that their CITES Management and Scientific Authorities participate, through their national CBD Focal Points, in the work of CBD and its Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) on these Principles and Guidelines; and

URGES the Parties that are also Parties to the CBD, to take effective measures at policy and institutional level to ensure synergy between their implementation of CITES and CBD at the national level.



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## Annex 1

### Sustainable use of Biodiversity Addis Ababa Principles and Guidelines

#### Summary

The Addis Ababa Principles and Guidelines for the Sustainable use of Biodiversity consist of 14 interdependent practical principles, operational guidelines and a few instruments for the implementation that govern the uses of components of biodiversity to ensure the sustainability of such uses. The principles provide a framework to assist Governments, resource managers, indigenous and local communities, the private sector and other stakeholders on how to ensure that their use of the components of biodiversity will not lead to the long-term decline of biological diversity. The principles are intended to be of general relevance although not all principles will apply equally to all situations, nor will they apply with equal rigour. Their application will vary according to the biodiversity being used, the conditions under which they are being used, and the institutional and cultural context in which the use is taking place.

Sustainability of use of biodiversity components will be enhanced if the following practical principles and related operational guidelines are applied

<b>Practical principle 1</b>	Supportive policies, laws and institutions are in place at all levels of governance and there are effective linkages between these levels.
<b>Practical principle 2</b>	Recognizing the need for a governing framework consistent with international/national laws, local users of biodiversity components should be sufficiently empowered and supported by rights to be responsible and accountable for use of the resources concerned.
<b>Practical principle 3</b>	International, national policies, laws and regulations that distort markets which contribute to habitat degradation or otherwise generate perverse incentives that undermine conservation and sustainable use of biodiversity, should be identified and removed or mitigated.
<b>Practical principle 4</b>	Adaptive management should be practiced, based on : a) Science and traditional and local knowledge; b) Iterative, timely and transparent feedback derived from monitoring the use, environmental, socio-economic impacts, and the status of the resource being used; and c) Adjusting management based on timely feedback from the monitoring procedures.
<b>Practical principle 5</b>	Sustainable use management goals and practices should avoid or minimize adverse impacts on ecosystems services, structure and functions as well as other components of ecosystems.
<b>Practical principle 6</b>	Interdisciplinary research into all aspects of the use and conservation of biological diversity should be promoted and supported.
<b>Practical principle 7</b>	The spatial and temporal scale of management should be compatible with the ecological and socio-economic scales of the use and its impact.
<b>Practical principle 8</b>	There should be arrangements for international cooperation where multinational decision-making and coordination are needed.
<b>Practical principle 9</b>	An interdisciplinary, participatory approach should be applied at the appropriate levels of management and governance related to the use.
<b>Practical principle 10</b>	International, national policies should take into account: a) Current and potential values derived from the use of biological diversity; b) Intrinsic and other non-economic values of biological diversity; and c) Market forces affecting the values and use.

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<b>Practical principle 11</b>	Users of biodiversity components should seek to minimize waste and adverse environmental impact and optimize benefits from uses.
<b>Practical principle 12</b>	The needs of indigenous and local communities who live with and are affected by the use and conservation of biological diversity, along with their contributions to its conservation and sustainable use, should be reflected in the distribution of the benefits from the use of those resources.
<b>Practical principle 13</b>	The costs of management and conservation of biological diversity should be internalized within the area of management and reflected in the distribution of the benefits from the use.
<b>Practical principle 14</b>	Education and public awareness programmes on conservation and sustainable use should be implemented and more effective methods of communications should be developed between and among stakeholders and managers.

## Appendix 2

### The toolbox of options &/or interventions currently available for managing elephants in southern Africa

#### A. Passive Methods

Method	Applicability	Advantages	Disadvantages/Risks	Capacity issues
1. No action	<ul style="list-style-type: none"> <li>* Self-regulating, unconstrained populations, e.g. very arid areas, very large landscapes</li> </ul>	<ul style="list-style-type: none"> <li>* Low direct costs</li> <li>* Not controversial and ethically acceptable</li> <li>* Costs of potential long term environmental costs need to be examined</li> </ul>	<ul style="list-style-type: none"> <li>* Loss of woodlands and associated species if population is growing rapidly and exponentially</li> <li>* Population reaches an unmanageable size</li> </ul>	<ul style="list-style-type: none"> <li>* Resources to protect expanding populations lacking in much of the region.</li> <li>* Resources to monitor &amp; assess ecological and other impacts - lacking outside SA</li> </ul>
2. Enlarge range	<ul style="list-style-type: none"> <li>* Limited applicability in SA, ZW and BW</li> <li>* Requires unoccupied area or areas of low human density</li> <li>* Expansion into settled areas will require high incentives and benefits to residents and responsibility for management</li> </ul>	<ul style="list-style-type: none"> <li>* Avoids lethal options</li> <li>* Ethically acceptable to most stakeholders</li> <li>* Conserves other species</li> </ul>	<ul style="list-style-type: none"> <li>* Increase in human-elephant conflict</li> <li>* May not reduce pressure on habitats in source areas</li> <li>* Cost of living with elephants becomes too high and landholders change their preference</li> <li>* Associated SU option may be opposed by animal rights and humane groups</li> </ul>	<ul style="list-style-type: none"> <li>* Capacity at agency and community levels to contain Human/ Elephant conflicts</li> <li>* Capacity to realize full benefits from elephant products is SU as option</li> </ul>
3. Fencing	<ul style="list-style-type: none"> <li>* To protect selected habitats</li> <li>* Contain/protect elephants in developed landscapes</li> </ul>	<ul style="list-style-type: none"> <li>* Techniques readily available</li> </ul>	<ul style="list-style-type: none"> <li>* Costs of erection and maintenance can be prohibitive</li> <li>* Breakout and spread of diseases</li> <li>* In rural settings in protection homes and fields has seldom been sustainable</li> </ul>	<ul style="list-style-type: none"> <li>* Resources for maintenance exorbitant.</li> </ul>
4. Manipulating water supplies	<ul style="list-style-type: none"> <li>* Limited to areas where artificial supplies have been provided</li> </ul>	<ul style="list-style-type: none"> <li>* Non lethal</li> <li>* Targets elephant impacts rather than numbers</li> </ul>	<ul style="list-style-type: none"> <li>* May cause stress in drought years</li> <li>* Management strategies for elephants may have adverse knock-on effects on other species</li> </ul>	<ul style="list-style-type: none"> <li>* Few protected areas have the resource to maintain an effective artificial water supply programme, let alone establish a reliable, long term manipulation programme</li> </ul>

## B. Active Methods

Method	Applicability	Advantages	Disadvantages/Risks	Capacity issues
1. Contraception	<ul style="list-style-type: none"> <li>* Small confined population in SA and possibly Malawi</li> <li>* Not considered an appropriate tool in Na, BW, Zm and ZW.</li> </ul>	<ul style="list-style-type: none"> <li>* Non lethal</li> <li>* Favoured by animal rights and welfare activists</li> </ul>	<ul style="list-style-type: none"> <li>* Long delay before population declines,</li> <li>* Has to be maintained over a long period</li> <li>* Long term effects on behaviour and social organizations uncertain</li> <li>* Not favoured by neighbouring communities</li> </ul>	<ul style="list-style-type: none"> <li>* Only South Africa presently has the technical capacity to implement it</li> <li>* High recurrent cost with no return other than containing elephant population growth</li> </ul>
2. Translocation	<ul style="list-style-type: none"> <li>* Appropriate for restocking areas.</li> <li>* Very limited applicability in cases of overpopulation</li> </ul>	<ul style="list-style-type: none"> <li>* Family group can be moved and so retain social cohesion in translocated animals</li> <li>* Can be used to restock areas with low populations</li> </ul>	<ul style="list-style-type: none"> <li>* Very high cost</li> <li>* Few areas left into which to move animals</li> <li>* Animals can return to original site</li> </ul>	<ul style="list-style-type: none"> <li>* Few teams available to carryout this type of operation on a large scale</li> </ul>
3. Driving/disturbing	<ul style="list-style-type: none"> <li>* Limited to moving herds short distances across a barrier that can be re-erected to prevent return of herds</li> </ul>	<ul style="list-style-type: none"> <li>* Non lethal</li> <li>* A means of rapidly moving herds out of selected areas</li> </ul>	<ul style="list-style-type: none"> <li>* Limited to areas of suitable terrain</li> </ul>	<ul style="list-style-type: none"> <li>* Very few people in the region with experience in this technique</li> </ul>
4. Culling/cropping	<ul style="list-style-type: none"> <li>* Technically feasible for any population where population needs to be reduced</li> </ul>	<ul style="list-style-type: none"> <li>* Rapid and effective means of reducing population size</li> <li>* Cost covered by recovery and sale of products</li> <li>* Can include local communities in direct benefits</li> </ul>	<ul style="list-style-type: none"> <li>* Opposed by some groups (e.g. animal rights activists and public opinion in many developed countries)</li> <li>* Maintains population in eruptive phase</li> <li>* Results in temporary disturbance of social and other behaviour</li> </ul>	<ul style="list-style-type: none"> <li>* Few experienced people left in the region after a gap of more than 15 years for ground culling and 10 years for aerial, drug assisted culling</li> </ul>