2010 Biodiversity Indicators Partnership

Biodiversity Indicators Capacity Strengthening: experiences from Africa

Progress, lessons learnt and needs for future indicator development

UNEP WCMC

www.bipnational.net

Introduction

This report presents many of the results, lessons learnt and recommendations from the *Biodiversity Indicators Capacity Strengthening in Africa* project, which assisted countries in eastern and southern Africa to develop national biodiversity indicators on a sustainable basis, utilising existing data to address national priority issues.

The project used a broad definition of biodiversity indicators as information tools to help summarise and simplify information on the status and threats to biodiversity, and to evaluate progress towards its conservation and sustainable use. Indicators are needed to help design and monitor national policies on biodiversity, the environment and sustainable development, as well as for reporting on international agreements such as the Convention on Biological Diversity and the Millennium Development Goals.

The project worked with thirteen countries from the eastern and southern Africa regions, with the development of partnerships between government agencies, NGOs and academic bodies a key part of its strategy. National teams or task forces were formed to produce a small number of indicators. These national partnerships greatly improved access to data and its analysis and communication. Through this practical work they built their technical and organizational capacity.

Project Facts

Duration: 2008 – 2010
Funding Source: UN Development Account (UNDA)
Implemented by: UNEP and the UNEP World Conservation Monitoring Centre (UNEP-WCMC), with the 2010 Biodiversity Indicators Partnership (2010 BIP)
Number of countries: 13
Number of national project partners: 58

The implementation of the project was built around a series of three capacity building workshops over a twelve month period in each region. The formation of national teams and selection of priority topics requiring indicators were started at the first workshop in each region. The results of stakeholder consultations and initial data gathering were reported at the second workshops, and final results and lessons learnt were shared at the final regional workshops. UNEP-WCMC provided guidance and technical support during and between the workshops.

This document presents examples of the indicators produced as a result of project and is designed as a means for sharing experiences and lessons learnt with biodiversity indicator developers across the globe. The report concludes with key challenges and needs for future national indicator development identified by the project partners.

Eastern Africa

Burundi	Ethiopia	Kenya	Rwanda	Tanzania	Uganda

Southern Africa

Botswana	Lesotho	Mozambique	Namibia	South Africa	Swaziland	Zimbabwe

UNEP promotes environmentally sound practices globally and in its own activities. This publication is printed on paper from sustainable forests including recycled fibre. The paper is chlorine free, and the inks vegetable-based. Our distribution policy aims to reduce UNEP's carbon footprint.

Further information
This document is designed to complement the 2010 BIP document, '*Guidance for National Biodiversity Indicator Development and Use*', which is available online: *www.bipnational.net/indicatorguidance*

More information on this project and national biodiversity indicator development are available from the National Biodiversity Indicators Portal: *www.bipnational.net*

Please contact *info@twentyten.net* to send feedback, questions and suggestions for improvement of this document, or to find out how your country could be involved in future biodiversity indicator capacity building work.

Citation: Bubb, P., Chenery, A. and Stanwell-Smith, D. (2010) Biodiversity Indicators Capacity Strengthening: experiences from Africa. UNEP World Conservation Monitoring Centre, Cambridge, UK. 18 pp.

The Biodiversity Indicator Development Framework

The Biodiversity Indicators Strengthening in Africa project and this report have been structured around a Biodiversity Indicator Development Framework, which contains key steps for producing successful biodiversity indicators. The framework has been developed from the capacity building experience of UNEP-WCMC and partners, including the 2010 BIP. Project partners were encouraged to consider and follow the framework steps when selecting and developing biodiversity indicators.

The framework can be separated into three areas:

Purpose – actions needed for selecting successful indicators,

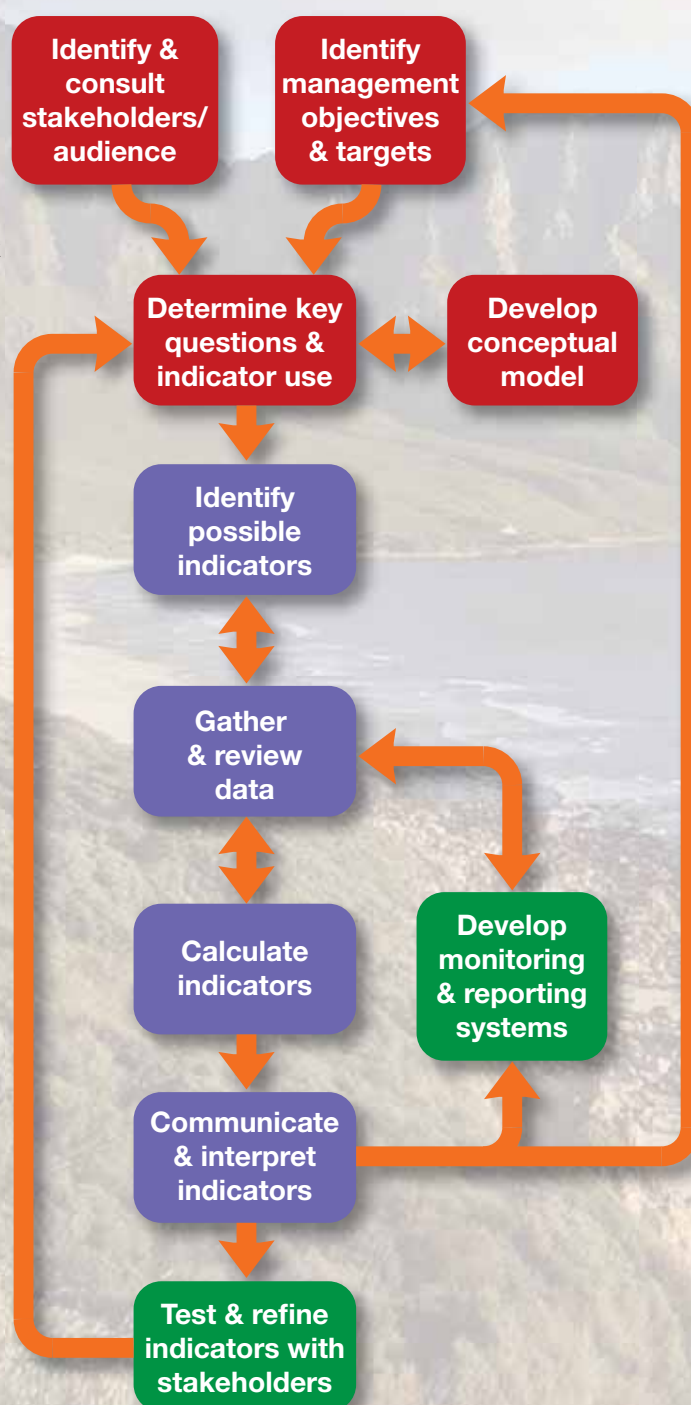**Production** – essential stages for indicator development,

Permanence – mechanisms for ensuring indicator continuity and sustainability.

More information on the Biodiversity Development Indicator Framework and each of the steps is provided in the companion document, '*Guidance for National Biodiversity Indicator Development and Use*', which is available at *www.bipnational. net/indicatorguidance*.

Reference

2010 Biodiversity Indicators Partnership. (2010) *Guidance for National Biodiversity Indicator Development and Use*.

UNEP World Conservation Monitoring Centre, Cambridge, UK. 40pp.

Identify & consult stakeholders/ audience

Identify management objectives & targets

Determine key questions & indicator use

Develop conceptual model

Identify possible indicators

Gather & review data

Develop monitoring & reporting systems

Calculate indicators

Communicate & interpret indicators

Test & refine indicators with stakeholders

Examples of Progress

Identify & consult stakeholders

Burundi: *A stakeholder workshop was held for 32 participants from government agencies, NGOs and media. The agenda included a discussion of the project and the need for biodiversity indicators for Burundi. Outcomes of the workshop included the acceptance of three indicators for immediate development.*

Mozambique: *Stakeholders were identified for the country's first State of the Environment 2010 report across a range of sectors, including agriculture.*

Lesotho: *A stakeholder meeting was held to review national management objectives and identify potential indicators for development. Selected indicators are protected area coverage, numbers of registered traditional doctors and total wetland area. Stakeholder meetings proved critical not only for identifying potential indicators but for highlighting suitable data sources.*

Identify management objectives and targets

Rwanda: *The project was integrated with an ongoing initiative to develop a national 'Biodiversity Information System', which identified national management objectives for the environmental sector.*

Tanzania: *Existing national targets, such as species population recovery targets were identified from policy reports, including the State of the Environment Report. One such target was for the national elephant population.*

Botswana: *Indicator development was delayed during the definition of a new National Development Plan, which includes greater conservation attention to taxa other than large mammals, as well as sustainable biodiversity management.*

Determine key questions and indicator use

Ethiopia: *The status of protected areas was determined to be a key issue of importance. Key questions were developed during several consultations and five where selected to aid indicator development:*
1. *What is the status of key species populations within our protected areas?*
2. *What is the status of land use in our country?*
3. *What is the extent of our protected areas?*
4. *What are the main pressures to our protected areas*
5. *How effective is protected area management?*

Swaziland: *Fourteen specific key questions where identified under three priority themes; Status and trends of biodiversity, threats to biodiversity and state of water resources. A potential indicator was identified for each of the questions.*

Zimbabwe: *Three main key questions were identified relating to deforestation, veld fires and land use change. The key use of potential indicators was identified for each question. For example an indicator relating to veld fires could be used to inform the public about the dangers of veld fires and their effect on biodiversity.*

Develop conceptual model

Namibia: *Conceptual models were completed to ensure indicators selected address all the key issues and questions identified.*

South Africa: *A conceptual model was developed around protected areas coverage of vegetation types, to assist with the indicator development. The model incorporated relevant international and national targets and the roles of each of the organizations/institutions involved in indicator development.*

Botswana: *General conceptual models have been developed around key issues of national importance. These models will be drawn upon when developing key questions and at the later stages of indicator development.*

Identify possible indicators

Uganda: *Nine indicators were selected for development using a Pressure-State-Impact-Response framework:*
- *Uganda Habitat Cover Index*
- *Uganda Species Population Index*
- *Uganda Big Six Index*
- *Uganda Primate Index*
- *Uganda Albertine Rift Index*
- *Uganda Grey Crowned Cranes Index*
- *Uganda Species Richness Index*
- *Uganda Biodiversity Index*
- *Uganda Living Planet Index 2010*

Burundi: *Three initial indicators were selected which respond to national priorities and key questions relating to the national status of bird populations, fish populations and forest extent.*

Zimbabwe: *Three priority indicators were identified for immediate development which responded to the key questions:*
- *Forest cover*
- *Land use change*
- *Extent of land affected by veld fires*

Throughout the project national partners were encouraged to share their progress in selecting and developing indicators according to the steps of the Biodiversity Indicator Development Framework. All nations advanced considerably as a result of the project and examples of their results are presented in this section.

Gather and review data

Rwanda: *Five initial indicators were selected on the basis that data was readily available and production could be started immediately. These include status of population trends, habitat extent, changes in status of threatened species, fisheries impacts and coverage of protected areas.*	**Lesotho:** *The initial stakeholder workshop was critical for identifying data sources that many organizations were not previously aware of. Data in most cases were patchy and incomplete. However it was possible to gather data from several sources for use in one indicator. For example the indicator, 'Number of traditional doctors' comprises data from several sources including Ministry of Finance and Development Planning (Bureau of Statistics) and Ministry of Tourism, Environment and Culture (Department of Environment).*	**South Africa:** *Data for the indicator 'Protection status of vegetation types' was gathered from three different sources: Department of Environmental Affairs, South Africa National Biodiversity Institute, South Africa Demarcation Board.*

Calculate indicators

Kenya: *15 identified indicators have been calculated, ranging from human wildlife conflict to wildlife disease. Calculation methods have been documented for each of the indicators in comprehensive individual factsheets to ensure standardized indicator production into the future.*	**Swaziland:** *Five initial indicators calculated: Ex situ crop collections, extent of ecosystems and assorted habitats, coverage of protected areas, representation of Red Listed species in protected areas, and coverage of ecosystem types within protected areas. A further five indicators are awaiting calculation.*	**Uganda:** *All nine selected indicators were calculated by several organizations including Makerere University Institute of Environment and Natural Resources, Uganda Wildlife Authority, National Environment Management Authority, Uganda Bureau of Statistics, and Nature Uganda. The calculations were done in association with WWF International and the Zoological Society of London using the methods of WWF's Living Planet Index.*

Communicate and interpret indicators

Ethiopia: *Work has been undertaken on indicator interpretation and additional biodiversity information has been collected for the development of a national indicator report.*	**Namibia:** *Indicators are being used to develop clear stories which are linked to issues of reliance and target audience. The indicators will be communicated in Namibia's State of Biodiversity Report for 2010.*	**Kenya:** *A national biodiversity indicators report is being produced as a collaboration between Kenya Wildlife Service and several national partners.*

Test and refine indicators with stakeholders

Tanzania: *Developed indicators will be presented at future consultative meetings to ensure they respond directly to the key questions and to refine them to meet the user's needs.*	**Uganda:** *There are plans to hold two additional stakeholder meetings to present the calculation procedures and the data required. These meetings will assist with refinement of the indicators and conclude in the adoption of methods that can be used to ensure standardisation of future indicator production.*	**South Africa:** *The 'Protection status of vegetation types' indicator has been tested by all stakeholders involved in its development. The next step in indicator refinement includes presenting the indicator to a wider range of stakeholders not involved in its development to get different views on its usefulness and advice on how the indicator can be improved.*

Develop monitoring and reporting systems

Kenya: *Plans for sustainable indicator development include the development of a monitoring system which produces data on a biannual basis. Methods for the existing data used in the indicators has been documented in indicator factsheets and this will aid standardized practices to ensure data collected can be incorporated into the indicators.*	**Uganda:** *The indicator development has been fully integrated within the government-led Biodiversity Committee with the calculation led by MUIENR in association with other national partners, and quality control with the Uganda Bureau of Statistics.*	

The Indicators

The project aimed to build technical and organizational capacity through the production of a small number of indicators for priority biodiversity issues, with this capacity then allowing future expansion to address more biodiversity indicator needs. Most of the project countries developed one or more biodiversity indicators, meaning they progressed from being introduced to the concept of biodiversity indicators and their uses through to selecting, calculating and then communicating their own indicators, all in the space of just one year. Those which had not managed to calculate indicators still made significant progress, with all countries having selected indicators for development which meet national priorities. Delays in progress were chiefly due to challenges in developing new collaborations between national institutions, rather than technical production issues.

In this section we present a selection of the indicators under a series of general key questions found to be common priorities across all countries involved.

## *What is the status of species populations within our country?*

Tanzania *What is the status of our elephant populations in relation to our national target of 120,000 individuals?*

Interpretation: Tanzania's elephant population increased from 52,823 ± 6,296 individuals in the year 1989 to 134,588 ± 12,039 in the year 2006, and then decreased to 109,290 ± 5,289 in the year 2009. The increase is influenced by the implementation a policy on the Management of African Elephant in Tanzania that emphasized the successful conservation of the species to allow its population to recover in protected areas, to resolve conflicts between elephant and legitimate human activities, and provide benefits from elephant conservation outside protected areas.

Population trend of the elephant population in Tanzania, 1989-2009
Data source: Tanzania Wildlife Research Institute (TAWIRI)

Tanzania elephant population trend 1989 - 2009
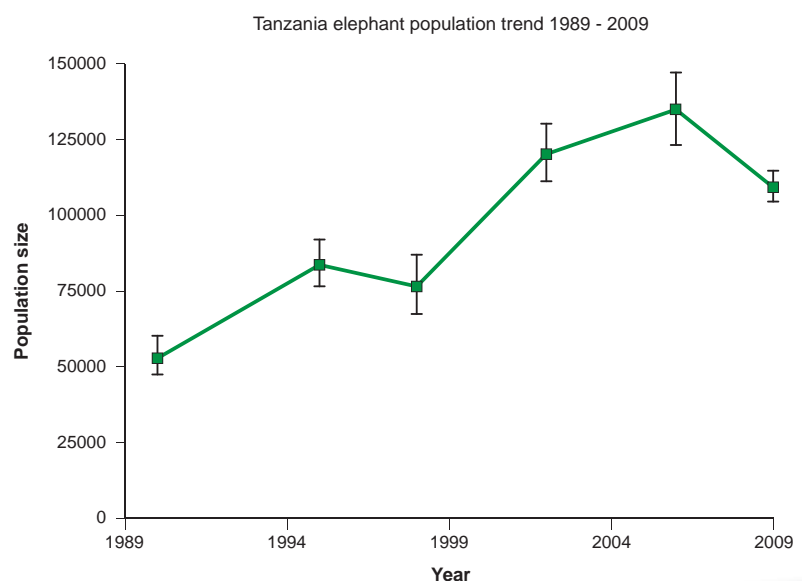
*Produced by: Samwel K. Bakari, TAWIRI.*

Uganda

What is the status of our 'Big Six' species (mountain gorilla, chimpanzee, Uganda kob, Rothschild's giraffe, elephant and lion) which are important for wildlife tourism?

Interpretation: The index is an indicator of the average change in the population abundance of the six species selected, with the index set to a value of 100 in 1970. The index shows an average population decline of the 'Big Six' species in the 1970s and 1980s due to poaching and habitat destruction during the civil strife in Uganda. Population levels have stabilised from 1990s onwards, although at only 40% of the 1970 value.

Uganda 'Big Six' Index
Data source: The main source of data for primates is Wildlife Conservation Society (WCS) censuses and Uganda Wildlife Authority for the other species
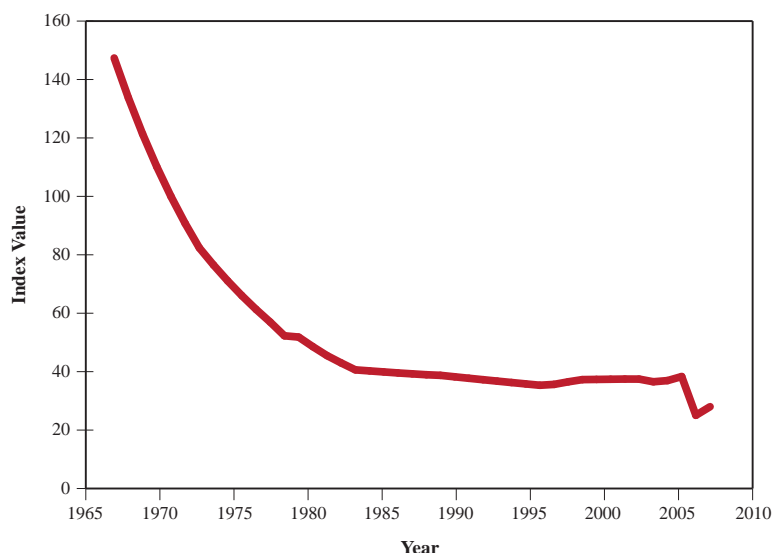
Produced by: MUIENR in association with WWF International and ZSL.

Ethiopia

*What is the status of Swayne's Hartebeest populations within our protected areas?*

Interpretation: There has been a considerable increase in the Swayne's Hartebeest population at SSHS, which is mainly due to decreases in mortality levels resulting from disease and poaching. Successful actions undertaken to reduce mortality levels include:
- Establishment of habitat management and ecological monitoring mechanisms, which have included capacity strengthening of the Sanctuary's staff;
- Better livestock disease monitoring and increased awareness of communities in areas surrounding the Sanctuary.

Population numbers in Necshar National Park have declined mainly due to poaching.

Population trend of Swayne's Hartebeest within Senekele Swayne's Hartebeest Sanctuary (SSHS) and Nechsar National Park
Data source: SSHS Annual and Monthly reports (complied by EWCA). Nechsar National Park Annual and Monthly Reports
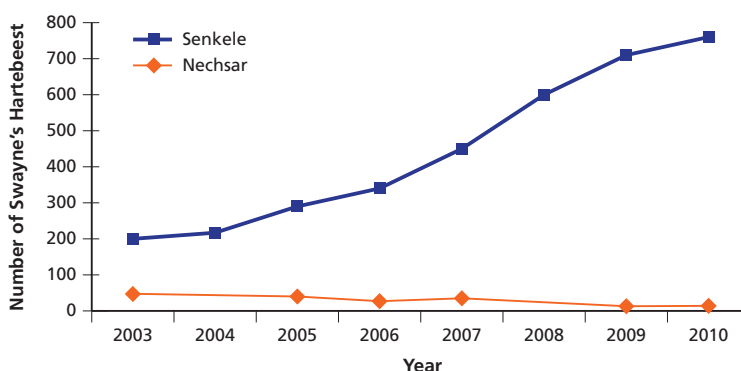
Produced by: Ethiopian Wildlife Conservation Authority (EWCA), Institute of Biodiversity Conservation (IBC), Central Statistics Agency (CSA) and Ethiopian Wildlife and Natural History Society (EWNHS).

# *What is the status of our national protected areas?*

Swaziland   *What is the coverage of our protected areas?*

Interpretation: Protected area coverage has increased to 5% of the country. Despite the increase, further protected areas are needed to provide an adequate network and coverage of our terrestrial ecosystems.

Coverage of protected areas in Swaziland expressed as percentage of total area of the country
*Data for 2010 are target based on areas that are currently under consideration (draft gazette being finalized) for proclamation and will be monitored on an annual basis.
Data source: BCPD (PWA) Survey Reports and accompanying datasets
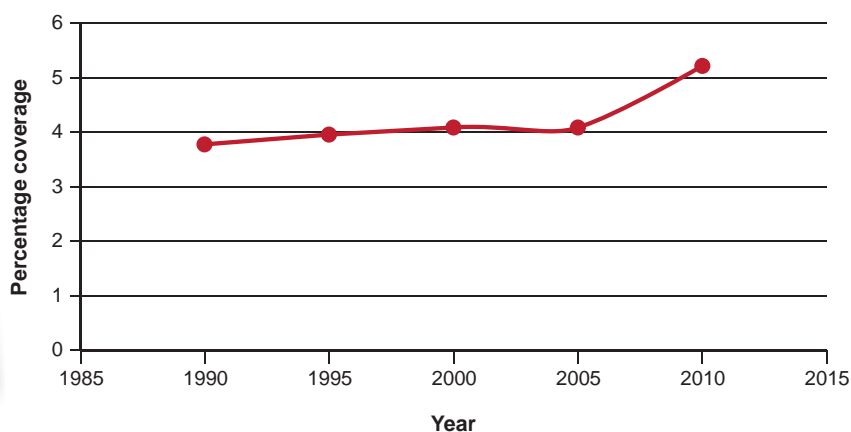
Produced by: Swaziland Environment Authority, the Swaziland National Trust Commission (SNTC), and the Central Statistics Office (CSO).

Namibia   *How much of our different biomes are protected by forms of conservation management?*

Interpretation: In 2009 the Lakes & Salt Pans biome is the best covered under conservation protection, at 98%. The Namib Desert biome coverage has increased to 93%, mainly because of the Skeleton Coast and Namib-Naukluft National Parks, the more recent registration of Communal Conservancies and establishment of Private Protected Areas. The Succulent Karoo biome coverage has increased to 91%, mainly due to the proclamation of the 2.5 million hectare Sperrgebiet National Park in 2008. The Broad-leafed Savanna coverage has

Percentage of biomes covered by different forms of conservation management
Data source: Namibia Nature Foundation
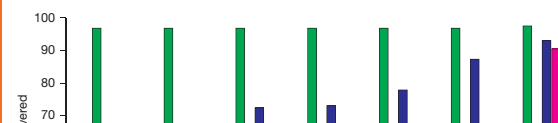
预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_11447