ELEPHANT PROTECTION INITIATIVE FOUNDATION

Guidelines & Standards for National Elephant Action Plans

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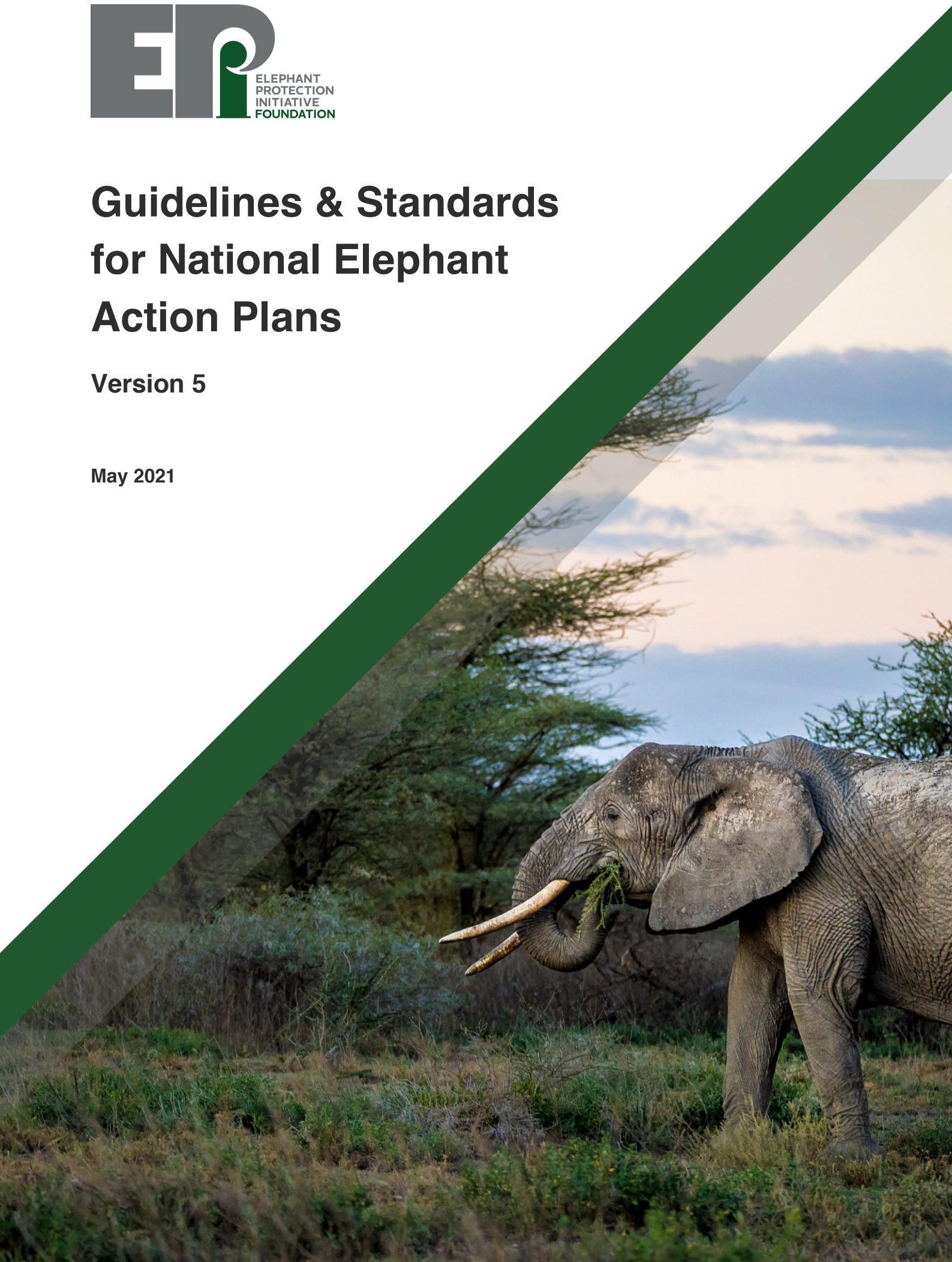


Contents

List of Abbreviations and Acronyms

- AEAP — African Elephant Action Plan
- AfESG — African Elephant Specialist Group (of the SSC)
- CITES — Convention on International Trade in Endangered Species of Wild Fauna and Flora
- CMP — Conservation Measures Partnership
- CoP — Conference of the Parties
- EPI — Elephant Protection Initiative
- EPIF — Elephant Protection Initiative Foundation
- ETIS — Elephant Trade Information System (see Glossary)
- FFI — Fauna & Flora International
- FZS — Frankfurt Zoological Society
- GIS — Geographic Information System
- HEC — Human–elephant conflict (see Glossary)
- ICCWC — International Consortium on Combating Wildlife Crime (see Glossary)
- IUCN — International Union for the Conservation of Nature
- LEER — Law Enforcement Effort Ratio
- LEM — Law Enforcement Monitoring
- MIKE — Monitoring the Illegal Killing of Elephants (see Glossary)
- NBSAP — National Biodiversity Strategy and Action Plan
- NDC — National Determined Contribution
- NDP — National Development Plan
- NEAP — National Elephant Action Plan
- NGO — Non-Government Organization
- NIAP — National Ivory Action Plan (see Glossary)
- NSP — National Spatial Plan
- PA — Protected Area
- PIKE — Proportion of Illegally Killed Elephants (see Appendix 5)
- SSC — Species Survival Commission (of IUCN)
- SMART — Specific, Measurable, Achievable, Realistic, and Time-bound
- SOPs — Standard Operating Procedures
- TAG — Technical Advisory Group (e.g. for MIKE and ETIS)
- TNC — The Nature Conservancy
- USGS — United States Geological Survey
- WCS — Wildlife Conservation Society
- WWF — World Wide Fund for Nature
- ZSL — Zoological Society of London

Foreword

Africa's rapidly growing human population and economic growth, with new and expanding human settlements, related infrastructure, and conversion of land to agriculture, loom as the largest threats to the long-term survival of elephants. With these comes an ever-increasing risk of escalating human elephant conflict (HEC), as people and elephants compete for land and dwindling natural resources. If existing conflicts are not resolved, and future conflicts avoided, the prospects of Africa's elephants thriving across their range in the next twenty years are bleak. The EPI Foundation will galvanise support for all EPI countries to help them manage and avoid HEC and facilitate coexistence of elephants and people to 2030 and beyond. The resolution of HEC is an integral part of the African Elephant Action Plan (AEAP), and therefore the National Elephant Action Plans (NEAPs) by which range States can implement the AEAP according to national priorities. This Guidelines & Standards manual has been updated to reflect the evolving challenges facing range States and their elephant populations, and provides you with the information required to develop an effective NEAP.

The overarching tool for long-term conservation of elephants and other wildlife is spatial and infrastructural planning at the different administrative levels. Sound land-use planning for conservation will minimize fragmentation and the human-elephant interface, thereby preventing and mitigating HEC whilst maintaining connectivity. Going forward, NEAPs will pay more attention to the resolution of HEC, and when feasible, they will also need to broadly assess the land-use situation for key landscapes in each range State, to propose appropriate spatial planning exercises (Chapter 3).

Spatial planning needs to be a key part of any conservation plan, which in turn needs to be integrated into development planning in general. The inexorable link between biodiversity and humans reinforces that nature conservation should be integrated into health, development and security initiatives, including through the UN Sustainable Development Goals (SDGs). The contribution of the AEAP objectives, and therefore any NEAP objectives, to the SDGs is provided in Annex 1, showing that investments in nature conservation also deliver far reaching benefits across society. Thus, global financing for nature conservation should be urgently scaled up to reduce poverty and protect biodiversity (Chapter 7).

Moreover, the COVID-19 pandemic has had a devastating impact on people, economies and societies across the world, with a major impact on wildlife conservation due to the loss in tourism revenue and consequently loss of jobs. As a result, many financing models are experiencing challenges, but looking ahead to 2030, now is the time to analyse these models and decide what approach is best suited to what circumstances (Chapter 7).

The EPI Foundation will continue to help African range States with coherent, creative, and effective management and financing solutions to protect elephant populations, under the umbrella of the AEAP. Based upon the experience gained over recent years, the focus of assistance will be on conventional funding applications to finance high-priority actions and prevention or mitigation of HEC.

Secretariat, EPI Foundation

1. Background

1.1. The Elephant Protection Initiative (EPI)

The Elephant Protection Initiative (EPI) is a Presidential-led Initiative to address the elephant crisis, launched by the governments of Botswana, Chad, Ethiopia, Gabon and Tanzania at the London Conference on Illegal Wildlife Trade in February 2014. The EPI has since grown into a continent-wide movement of 21 African member states (as of April 2021) and continues to grow with other countries expressing interest in joining. Member States include; the five founder countries together with Angola, Benin, Congo Brazzaville, Côte d'Ivoire, Eritrea, the Gambia, Guinea, Kenya, Liberia, Malawi, Mali, Nigeria, Sierra Leone, Somalia, South Sudan, and Uganda. Moreover, 34 leading NGOs and IGOs have formally declared their support of the EPI.

The EPI is led by African governments, guided by its Leadership Council, and supported by a small and innovative secretariat, the EPI Foundation. This unique pan African alliance covers the majority of Africa's remaining elephants, with common policies on elephant conservation. The EPI's founding four objectives are:

- Implement the African Elephant Action Plan (AEAP);
- Place ivory stockpiles beyond economic use;
- Maintain the 1989 international moratorium on ivory trade for ten years or until elephant populations recover;
- Close domestic ivory markets.

Additionally, the EPI Foundation Vision to 2030 focuses on co-existence between people and elephants, whilst continuing work to meet the objectives of the EPI declaration.

1.2. The African Elephant Action Plan (AEAP)

The African Elephant Action Plan (AEAP) was adopted by all African elephant range States in March 2010 at the 15th Conference of the Parties to CITES. The Plan was developed through a consultative process, facilitated by IUCN and the CITES Secretariat. As a consensus document, the AEAP is a powerful tool for the conservation of Africa's elephants, backed by a strong process with broad legitimacy, and a clearly supported mandate for guiding action towards the conservation and management of Africa's elephants. The 8 generic objectives of the AEAP are provided below.

AEAP Objectives:

1. Reduce illegal killing of elephants and illegal trade in elephant products.
2. Maintain elephant habitats and restore connectivity.
3. Reduce human-elephant conflicts (HEC).
4. Increase awareness on elephant conservation and management of key stakeholders that include policy makers and local communities among other interest groups.
5. Strengthen range States' knowledge on African elephant management.
6. Strengthen cooperation and understanding among African elephant range States.
7. Improve local communities' cooperation and collaboration in conserving African elephants.
8. Ensure the African Elephant Action Plan is effectively implemented.

2. National Elephant Action Plans (NEAPs)

2.1. Overview and purpose

The EPI was created with the primary purpose of supporting the implementation of the AEAP. EPI member States are committed to developing and implementing National Elephant Action Plans (NEAPs). The purpose of these NEAPs is to help EPI States identify and prioritize the actions they need to take to protect, manage, and monitor their elephants in line with the AEAP and to provide the national level detail that is needed for effective implementation but could not be included in the AEAP, because the latter is a continental-level plan. The NEAPs are intended to present a cohesive and comprehensive body of work necessary to conserve a range State's elephants, and thus implement the AEAP in that State. This includes but is not limited to minimizing human-elephant conflict, involving local communities in wildlife conservation and management to instill ownership of resources and to increase benefits from these, and combatting the illegal trade in ivory.

Many African elephant range States already have national-level elephant action plans and strategies in addition to the AEAP, and so the NEAP process is designed to be as straightforward, quick, and low-cost as possible and to utilize fully existing plans if the State authorities so wish.

Since March 2013, the Standing Committee of CITES has requested that a number of countries identified as being of concern for their role in the illegal ivory trade – whether as source, transit, or demand countries – develop National Ivory Action Plans (NIAPs), "with time frames and milestones", and "to include where possible indicators to measure the impacts of the actions in the NIAPs (e.g. through data on elephant poaching levels; number of ivory seizures; successful prosecutions; and changes to legislation)". In many cases, therefore, it will make sense to include the actions required as part of a country's NIAP in its NEAP. Indeed, the format of a NEAP allows for additional detail to be added beyond that specified by CITES for the NIAPs and, most importantly, should help a country seek support for the implementation of its NIAP.

2.2. Criteria

All African elephant range States that have committed to the EPI (the EPI member States) need a National Elephant Action Plan (NEAP) that meets a number of criteria. In brief, all NEAPs must:

- Be prepared by or with the full participation of the relevant EPI State authorities.
- Align with the 8 generic objectives of the African Elephant Action Plan (AEAP).
- Be for at least a 10-year period.
- Contain a detailed implementation plan for the medium term (three years) that (i) provides the details of the actions and their respective activities that need to be taken, by whom, where, how, and by what date or over what timeframe, (ii) provides a clear monitoring and evaluation plan including targets and indicators, and (iii) identifies the highest priority actions requiring urgent funding.
- Identify the longer-term actions that are also necessary to deliver the NEAP's goal.
- Be "SMART" (i.e. Specific, Measurable, Achievable, Realistic, and Time-bound).
- Include a clear process for promoting and monitoring implementation through the appointment of a NEAP Coordinator and a National Elephant Action Plan Coordination Committee (NEAPCC).

The rest of this document covers these requirements in more detail, providing guidelines and standards for the preparation of NEAPs.

2.3. Existing plans or strategies

A requirement of the EPI is that NEAPs should align with the 8 generic objectives of the AEAP. Nevertheless, a fundamental principle governing the preparation of NEAPs is that there is no need to reinvent the wheel. Any NEAP should make full use of existing elephant strategies and action plans including the National Ivory Action Plans (NIAPs), as well as any relevant regional strategies.

Thus, if a reasonably up to date national strategy or action plan for elephant conservation already exists then it should be considered a key source – together with the AEAP (and any NIAP) – for the preparation of that State's NEAP. In such cases, the NEAP could take the form of a compilation of the relevant updated sections of any existing national strategy or action plan, presented in such a manner that their relation to any NIAP is made clear and that it is fully aligned to the 8 generic objectives of the AEAP.

If, on the other hand, a national elephant strategy or action plan does not exist or it is long out of date, then the NEAP will have to be primarily informed by the AEAP, while the EPI Foundation can support identifying what should be included, plus as many relevant national sources of information as can be collated. In either case, it may be desirable to prepare the NEAP in a participatory workshop environment. The workshop process should emphasize participation by as many stakeholders as possible, including (as applicable) elephant specialists, national government staff responsible for implementation, members of local communities, politicians (if relevant), and so on (see the guidelines in Section 4.3 for further information).

These two different starting points for the preparation of NEAPs are summarized below and the implications for the structure and format of the resulting NEAPs are then discussed in Section 4.2.

2.4. Possible formats for NEAPs

There are two possible formats for NEAPs that meet the requirements of the EPI Foundation:

2.4.1. Prepare a new, standalone NEAP with an implementation plan included as an annex.

Such a NEAP will be informed by any relevant national strategies or action plans (e.g. old elephant conservation strategies or plans that still contain useful information, national wildlife conservation plans, and land use plans). Any such standalone NEAP must include a medium-term (3-year) implementation plan in the form of an annex that contains detailed actions/activities, methods, targets, and monitoring and evaluation plans. It must also show how the various national actions/activities will meet the objectives of the AEAP, any relevant NIAP, and the goals of the EPI (for EPI States). It is usually best to produce such detailed standalone plans in a participatory workshop environment (see Section 4.1 of this document and Chapter 9 of the IUCN/SSC booklet "Strategic Planning for Species Conservation: A Handbook" (IUCN/SSC 2008a) , which provides much useful advice on running national action-planning workshops).

2.4.2. Use an existing national strategy or action plan for elephant conservation

Use an existing national strategy or action plan for elephant conservation (updated and aligned to the 8 strategic objectives of the AEAP) and add an implementation plan as an annex that includes detailed actions/activities, methods, targets, and monitoring and evaluation plans for the medium-term (3 years). This should describe how the various national-level actions will meet the 8 strategic objectives of the AEAP, any relevant NIAP, and the goals of the EPI (for EPI States). This approach is described in Section 4.2, and

standards for implementation plans are described in Section 5. This will typically be the preferred option when a State has a recent detailed national strategy or action plan for elephant conservation that contains a wealth of useful information. Updating, alignment to the AEAP, and adding an implementation plan as an annex will often be the approach that best integrates existing work and facilitates “buy-in” from those partners and donors who prepared and/or funded the existing plan or strategy, whilst not creating too much additional work.

2.5. Outline of a step-by-step process for preparing a NEAP

The following list provides a general outline of the steps necessary when preparing a NEAP:

a. Assess which of the two scenarios described previously applies to the range State.
b. Decide whether it would be useful to formally review how effectively any existing national elephant conservation strategy or action plan was implemented; identifying what was implemented effectively, what was not and why. Commission such a review if deemed desirable, or make such a review part of the NEAP workshop agenda.
c. Decide how many workshops will be needed. For example, will there be need for one or more small sub-national workshops or just one larger national workshop? Will the workshop(s) aim to produce the entire NEAP including the implementation plan (Section 5) or will a separate implementation plan workshop(s) be needed?
d. Decide on workshop participants (Section 4.3) and invite them allowing reasonable notice, especially for those who will need to travel from abroad.
e. Select and agree on a small drafting group who will be responsible for preparing the draft NEAP post-workshop, including the draft implementation plan. The most effective way of preparing a NEAP and implementation plan is for the drafting team to set aside 3–5 days immediately after the workshop(s) during which they write the entire draft while the discussions are fresh in peoples’ minds.
f. Prepare the agenda(s) for the workshop(s).
g. Decide on the documents that will be circulated as background material and/or for comments to the participants before the workshop(s).
h. Prepare a list of data and other materials that the participants will be asked to bring to the workshop(s).
i. Circulate the agenda and workshop documents as well as any requests for data and other material to the participants at least a month before the workshop(s).
j. Hold the workshop(s). Typically, the workshop(s) will be held over a 2 or 3 day period.
k. Prepare the draft NEAP and implementation plan as soon after the workshop (or final workshop) as possible.
l. Send the draft NEAP and implementation plan to the workshop participants for review (allowing one month for comments to be returned).
m. Revise the NEAP and implementation plan based on the comments received and decide whether a further round of review will be needed.
n. Once a final draft of the NEAP including the implementation plan is agreed, send it to the appropriate senior government officials for approval and endorsement.
o. Appoint a NEAP Coordinator and a National Elephant Action Plan Coordination Committee (NEAPCC).
p. Begin fund-raising using the NEAP.
q. Consider a formal launch of the NEAP with the relevant minister(s), national and international media in attendance.
r. Convene regular meetings (e.g. twice a year) of the NEAP Coordinator and the NEAPCC to monitor progress with implementing the NEAP.

3. Spatial and Infrastructure Planning and National Plans

Prior to describing the detailed guidelines for preparing NEAPs, we need to provide some background information on spatial planning, for which range State specific information is required to inform the Status Review and Threats Analyses (4.1.2). Spatial planning, which includes infrastructural planning, should be considered as the overarching tool for long-term conservation, first to minimize the human-elephant interface, thereby preventing and/or mitigating HEC, and second, to maintain connectivity under conditions of accelerating climate change (building resilience).

Spatial and infrastructural planning for biodiversity conservation can be applied at four broad levels: regional (international), national, district/county/provincial and local. These correspond to the levels of government at which decisions about land use are usually taken, where regional planning applies to the governments of two or more range States. Different kinds of decisions are taken at each level, where the methods of planning and types of plans also differ. However, at each level there is need for a land-use strategy, policies that indicate planning priorities, projects that tackle these priorities and operational planning to get the work done. This entire process is facilitated by improved interaction between the different levels of planning.

Moreover, at each successive level of planning, the direct participation of local communities needs to increase. In land-use planning, public education is just as important as land-use zoning and regulation. Thus, spatial planning, especially at the regional and national levels (macro level), is typically a long term expensive process that requires strong support from the respective levels of government, and often involves legislative changes that may take years to materialize.

Furthermore, even in cases where income derived from wildlife-based tourism (the natural capital) constitutes a significant proportion of GDP, spatial and infrastructure planning for biodiversity conservation will meet with ample resistance from main developers, who will give priority to other types of projects with different sources of external funding. Spatial planning may however well be the only sound way to affect long-term mitigation of HEC, thereby also improving conservation of other vulnerable species and habitats, while safeguarding the natural capital, securing carbon, and improving the relationship with local communities.

Spatial and infrastructure planning needs to be an integral part of National Development Strategies (NDSs) and evidently National Development Plans (NDPs), thereby linking the SDGs, biodiversity (NBSAPs – National Biodiversity Strategy and Action Plans) and climate change to the NDSs/NDPs, the latter through the Nationally Determined Contributions (NDCs). Following the COVID-19 pandemic, it may also involve public health considerations.

Most range states have some sort of an NDS and/or NDP, while a few also have a National Spatial Plan (NSP). Using spatial and infrastructure planning, large areas of contiguous habitat need to be maintained or created, where under conditions of accelerating climate change, elephants and other wildlife species that require vast areas can manage to survive in the long term, thereby safeguarding biodiversity while minimizing the human-elephant interface.

Although most of the actual planning is done at the district, county or provincial levels, the NDP or NSP needs to be conducive to land-use planning at these lower administrative levels, while accounting for diurnal and seasonal movements of elephants and other wildlife. In other words, district, province or county level plans should be harmonized with national plans to avoid discrepancies and/or conflicts in priorities (see Box 1).

Box 1. Example of discrepancy between planning priorities at different administrative levels.

A good example of where this went wrong is the situation that faced farmers in Naledi, situated on the edge of Chobe National Park in northern Botswana (Gupta, 2013). Here, conflicting conditions existed for farmers – on one hand incentives from the central government that encouraged farming but on the other hand ecological conditions with high elephant densities resulting from the district-level prioritization of wildlife conservation that resulted in low production levels, despite farmer participation in agricultural programs. In Naledi, some villagers maintained the appearances of an agrarian lifestyle through nominal participation in subsidized relatively risk-free agricultural activities, yet with little expectation of subsistence or cash crop production. Other farmers did not even participate in farming, but instead relied entirely on non-farm sources of income, in particular government safety net and entitlement programs, as well as remittances. First, this represents a case of human-wildlife conflict in the context of a welfare state, and second it shows conflict in planning priorities at different administrative levels, i.e. national development with focus on agriculture versus district-level planning with focus on wildlife conservation (Gupta, 2013).

Once the human-elephant interface has been minimized at the macro level, interactions between humans and elephants will need to be minimized further through participatory local level land-use planning.

3.1. Land-use Planning at the Local Level

Local-level land-use planning needs to be tackled by a participatory approach, involving all local stakeholders in the process that should be based on understanding and acceptance. Prior to this process, active elephant and wildlife corridors and preferred seasonal feeding and watering areas need to be identified.

Once the continuous habitat in question is sufficiently large for elephants and other wildlife to survive in the long term, even under conditions of accelerating climate change and, the interface between humans and wildlife has been minimized, the process requires identifying areas suitable for farming staple and cash crops, including settlements. These areas have to be clearly demarcated for elephants as no-go zones.

Overlaps of defined areas set aside for people and for wildlife and therefore competition for resources should be circumvented. Only in cases where this is difficult to avoid, HWC/HEC mitigation tools need to be used. The challenge of coexistence, whereby a landscape is used and managed in such a way that people find safe space and ways to make a living, but elephants and other wildlife also find safe space to thrive falls or stands with this pragmatic approach to spatial planning at both the macro and local levels.

The above, however, describes the simplified theoretical basis for spatial planning, while in the real world, for many range States where elephants occur outside protected areas, landscape heterogeneity has been gradually modified by anthropogenic factors such as logging, farming, settlements and livestock. This in turn has led to increased fragmentation of entire landscapes, which is the breaking up of continuous natural habitat into smaller patches, whereby a patch is an area having relatively homogeneous conditions relative to other patches.

Fragmentation is a major threat to global biodiversity and species distribution, first due to isolation of protected areas, and second, in the case of elephants, increased patchiness not only results in a decline of the dispersal area, but it disrupts movements via corridors and migration routes, thereby severing

connectivity and lowering resilience, especially under conditions of accelerating climate change. Increased patchiness will also lead to an increase of edges with farmlands and settlements (human-elephant interface). Because we are dealing with perimeters of irregularly shaped patches, an increase in fragmentation or patchiness results in an exponential increase in the human-elephant interface, thus human-elephant conflicts. Therefore, the degree of fragmentation, possibly with some other covariates, may provide a compound measure or index of HEC.

Large patches of natural habitat (15 – 16 km) determined by large blocks of farms merely change the distribution of elephants to less cultivated areas without affecting elephant population dynamics (Pittiglio, 2012). Further fragmentation due to a lot of scattered small farms will result in an exponential increase in HEC, but eventually with declining elephant presence up to the point where they will completely disappear from the landscape (fragmentation threshold). Many scattered small farms act as 'stepping-stone corridors' for elephants providing alternative food sources during their nightly forage trips (Pittiglio, 2012). This implies that in terms of spatial planning to mitigate HEC, the size of the human-elephant interface needs to be minimized, whereby a few large farm blocks with settlements is preferred to a large number of small farms scattered over the landscape.

However, the overarching tool for long-term conservation and HEC mitigation – that is spatial planning – not only requires ample financial support and lots of patience, but also bringing all relevant stakeholders in a country together, such as in a national committee that meets regularly, with representatives from the communities, the wildlife authorities, as well as the agricultural, infrastructure and land-use planning authorities from all relevant levels of government. Moreover, spatial planning needs to be part of an integrated approach to development planning.

3.2. Integrating SDGs & Climate Action in NDSs/NDPs

Sustainable and resilient development can best be achieved through an integrated approach that builds on the synergies of actions on development, biodiversity, climate change and resilience. Implementing the three major global development frameworks, namely; the UN Sustainable Development Goals (SDGs) (Annex 1), Biodiversity-related Conventions (through National Biodiversity Strategy and Action Plans or NBSAPs) and the Paris Agreement on Climate Change (NDCs), through systematic programmatic integration and mainstreaming in development plans and policies. The need to approach multiple development challenges in a holistic manner stems from the fact that in the past the silos approach has proven to be ineffective. The approach suggested here offers unprecedented opportunities of achieving multiple development benefits.

There are many potential entry-points for effectively integrating the SDGs, the NBSAPs and NDCs into development frameworks at national and sub-national levels. This however prompts the need for a drastic shift in national development planning processes, requiring a framework that adequately and systematically integrates the global frameworks around national development needs and priorities to advance socio-economic development to reduce poverty, while mitigating the results of climate change and conserving biodiversity.

To achieve this, a National Development Strategy needs to be developed, comprising broad goals and aspirations for a diversified and resilient economy, including mitigating the results of climate change and conserving biodiversity through macro-level spatial and infrastructure planning. To develop this into an effective National Development & Implementation Plan, support should be solicited from other stakeholders to develop a common methodology and framework for a comprehensive and practicable implementation plan that will meet both national information sharing needs and obligatory reporting requirements on the SDGs, the Paris Agreement implementation progress, and the global biodiversity conventions.

4. Guidelines for preparing NEAPs

As described above, NEAPs can take two formats depending on the availability of existing strategies and plans and the needs and preferences of the State's authorities.

4.1. Preparing a standalone NEAP "from scratch"

4.1.1. Timeframe and overall structure and format

The first thing to decide is the timeframe to be covered by the NEAP. The EPI Foundation requires any NEAP to be for at least a period of 10 years but it may be appropriate in some circumstances to choose a longer period, e.g. 15 or 20 years.

Conservation strategies and action plans typically adopt a similar structure and format. That structure is often as follows:

i. A status review and threat analysis;
ii. A vision, goal, and objectives;
iii. Actions and activities, with associated targets and indicators of progress.

The IUCN Species Conservation Planning Task Force recommended a slight variation on this approach in its "Strategic Planning for Species Conservation: A Handbook" (IUCN/SSC 2008a; Box 2). While the IUCN approach was intended primarily for range-wide strategies/action plans it can be easily adapted for national strategies/action plans including NEAPs – the IUCN Handbook contains extensive discussions on the role and preparation of national action plans. More generally, it is recommended that those responsible for the preparation of NEAPs familiarize themselves with the IUCN/SSC "Strategic Planning for Species Conservation: A Handbook" (IUCN/SSC 2008a) or at least the shorter "Strategic Planning for Species Conservation: An Overview" (IUCN/SSC 2008b) as these resources contain a wealth of advice that may be relevant to the NEAP process.

4.1.2. Status review and threat analysis

A status review should provide information on the status of elephants in the range State and threats to elephants and their habitats along with information about the evidence-base for the threat data. This includes information on HEC, spatial planning, relevant legislation, law enforcement capacity, an analysis of the range State's preventive and criminal justice responses to wildlife crime, poaching levels (elephants), national capacity regarding wildlife conservation, existing concessions, community-managed conservancies, and community-based tourism initiatives.

In the Status Review and following sections (action plan) we should distinguish between the two different species of African elephants, savanna elephants (*Loxodonta africana*), classified as "endangered, and forest elephants (*Loxodonta cyclotis*), classified as "critically endangered" by the IUCN.

Although the data may not always be available, this particular section of the NEAP informs the action plan and should ideally contain the following information:

- Distribution and abundance of elephants in the country, with information about the trends in those parameters. When practically feasible, the information about distribution, abundance, and trends should be coded according to the reliability of the data. The IUCN/SSC African Elephant Database and the associated periodic Status Reports are a useful resource here.

- Information about the distribution, types, extent (severity), and frequency of human–elephant conflicts (HEC) should be included, with reference to the data that form the evidence-base. It is strongly advised to include a brief list of ongoing and planned activities and partners responsible for mitigation and prevention of HEC.

- Regarding HEC and the size of the human-elephant interface, relevant information on habitat fragmentation, ongoing and planned spatial planning exercises that account for diurnal and seasonal movements of elephants and other wildlife (National Development Plans (NDPs), National Spatial Plans (NSPs) and local land-use plans) should be included as well. Because most of the actual planning is done at the district, county or provincial levels, if available at all and if practically feasible, it is advised to include the results of a brief comparison between national level plans (NDP or NSP) and those for the lower administrative levels to check for harmonization of plans.

- Information on wildlife legislation and law-enforcement capacity at both the national and site levels, as well as information on poaching levels (PIKE; see Annex 5) should be included. Moreover, when practically feasible, it is advised to conduct a problem analysis relating to wildlife crime in the range State, using the ICCWC Wildlife and Forest Crime Analytic Toolkit (ICCWC Toolkit: https://www.cites.org/eng/prog/iccwc.php/Tools). The ICCWC Toolkit helps to analyse a country's preventive and criminal justice responses to wildlife (and forest) crime, to identify technical assistance and capacity building needs.

- Information on national capacity or lack thereof for wildlife conservation should be included.

- Last but certainly not least, information on existing concessions and community involvement in wildlife conservation (conservancies) as well as community-based tourism initiatives should also be included.

4.1.3. Vision

Most strategic planning processes, including the IUCN/SSC Species Conservation Planning Task Force's Guidelines referred to above (IUCN/SSC 2008a, b), define a vision as "an inspirational and relatively short statement describing the desired future state for the species". Hence, **the vision describes, in broad terms, the desired range and abundance for the species, its ecological role, and its relationships with people**. The vision for a NEAP should, therefore, be derived from an analysis of the species' status, primarily in the country preparing the NEAP but also informed by regional (landscapes) and range-wide concerns, and from a detailed consideration of the long-term national (as well as regional and range-wide) conservation needs of the species (informed by a threat analysis). The vision should be as ambitious and as inclusive as possible. For elephants, a 100-year vision is arguably appropriate because 100 years is only roughly twice the lifespan of a wild elephant, thus it is difficult to conceive of a shorter period that would be meaningful if our vision and goal are to address questions of population and habitat viability.

Example vision statement for Gabon: "Forest elephant populations in Gabon have vast forest areas across the country available to them and coexist with humans in a mutually beneficial relationship for the next hundred years and beyond".

4.1.4. Goal

While vision statements of the type described above are inspiring encapsulations of what needs to be achieved in order to save a species, a more detailed goal is typically also needed. Therefore, the IUCN/SSC Species Conservation Planning Guidelines treat **goals as the vision re-defined in operational terms**. Thus goals specify, for example, the desired number of ecologically functioning populations to achieve replication per major habitat type, or whether restoration (reintroduction) is needed. Goals in the IUCN/SSC process therefore have the same long-term timeframe and wide spatial scale as the vision, and they are developed using the same criteria for what it means to save the species that were agreed when developing the vision (e.g. striving to achieve ecologically functioning populations). Other planning approaches emphasize shorter-term goals. For the NEAPs, we use a single goal for the timeframe of the NEAP (10 years or longer), being (part of) the vision in operational terms.

Example goal for Gabon: "Stop the decline of elephant populations in Gabon and maintain their habitat and distribution in large interconnected conservation areas, while resolving human-elephant conflict and increasing the benefits of their conservation for the country by 2028".

4.1.5. Objectives

Realizing the vision and goal of a conservation strategy or action plan requires overcoming a number of obstacles. In many planning systems, including that of IUCN/SSC (2008a, b), **the objectives specify the approaches to be taken to overcome those obstacles**. The obstacles are often identified using some form of problem analysis, which typically builds on the threat analysis conducted as part of the status review, but also identifies a broader array of constraints on achieving the vision and goal including lack of national capacity and sound spatial planning.

The ICCWC Wildlife and Forest Crime Analytic Toolkit (ICCWC Toolkit) is an especially useful tool for conducting problem analyses relating to wildlife crime in a country. The ICCWC Toolkit helps "to analyze a country's preventive and criminal justice responses to wildlife and forest crime, to identify technical assistance and capacity building needs, and to design a work plan. The ICWWC Toolkit is organized into five parts:

i. Legislation relevant to wildlife and forest offences as well as other illicit activities;
ii. Law enforcement response to wildlife and forest offences;

iii. Judiciary and prosecution: capacities to respond to wildlife and forest crime;
iv. Drivers and prevention: factors leading to wildlife and forest offences and effectiveness of preventive interventions; and
v. Data analysis: availability, collection and examination of data and other information relevant to wildlife and forest crime". Further information about the ICCWC Toolkit, including the Toolkit in English, French and Spanish, is available at: https://www.cites.org/eng/prog/iccwc.php/Tools.

Once the threats and constraints have been analyzed, the ways to tackle them are summarized as a set of objectives [a method that is explained step by step in IUCN (2008a)]. Broadly speaking, objectives outline how the vision and goal of a strategy or action plan can be turned into reality. In other words, **the vision and goal describe a future scenario that the stakeholders wish to achieve for the species and the objectives identify the multiple steps needed to realize that scenario.**

Objectives should be: clear and easily understandable; allow actions and activities to be derived from them; be realistic, and; should be capable of being tracked (using targets and associated indicators). Because the NEAPs need to be fully aligned to the objective structure of the AEAP, we need to use the 8 generic objectives of the AEAP, albeit adapted to local circumstances.

4.1.6. Actions and activities

Actions and related activities are **the things that need to be done to achieve the NEAP's objectives and, ultimately, its goal and vision.** Proposed actions and activities are likely to be diverse.

For example:
- "conduct regular patrols in key elephant areas using the SMART (see Annex 6) system to effectively protect elephants and their habitat".
- "create intelligence networks around protected areas",
- "conduct surveys of elephant distribution and abundance",
- "conduct annual inventories of ivory stockpiles and report on the results to CITES".

The body of a NEAP should contain a list of all the actions and related activities necessary to meet the NEAP's objectives and realize its goal over the 10-year period typically covered by a NEAP. However, because NEAPs are intended to be "living documents" with the primary purpose of promoting and driving implementation "on the ground", NEAPs also need to include detailed implementation plans (see Section 5) for the medium term (3 years) that provide the details of what needs to be done, by whom, where, how, and by what date or over what timeframe. In addition, targets and indicators of progress should be defined for each action or set of related actions because they help to define what each action is intended to achieve and when the action has been performed successfully. It is also necessary to define monitoring and evaluation needs for each action or set of related actions. Finally, it is useful to attach priority rankings to the actions and related activities; it is a requirement of the EPI Foundation that the highest priority actions and activities requiring urgent funding are identified and presented as a list in the Executive Summary of an EPI State's NEAP.

An example template for a table summarizing Vision, Goal, Objectives, Actions and Activities is provided in Annex 3.

A detailed 3-year implementation plan should be included as an annex to every NEAP because doing so allows for easy updating of a NEAP without having to modify the body of the document. For example, as actions are completed or new actions identified as being necessary, the implementation plan annex can – and should – be updated because doing so will help ensure the NEAP is a "living document" that can be used both by the national authorities and by their partners to avoid any duplication of activities and to monitor

the progress of elephant conservation in the country. For further information about the structure and content of implementation plans see Section 5 and the implementation plan template (Annex 2).

Box 2: Component of a Species Conservation Strategy or Action Plan as recommended by IUCN/SSC (2008a) and potentially suitable as a basis for NEAPs; source IUCN/SSC (2008b).

A Species Conservation Strategy (SCS), as described in this document (i.e. IUCN/SSC 2008b), is a range-wide (or in some cases a regional) blueprint for saving a species or group of species. The approach we outline here is one of a number of possible forms that a SCS could take and it should not be misunderstood as an inflexible prescription. The process we recommend has been tried successfully in a number of instances, though sometimes the terminology and definitions used by conservation planners may have been slightly different even if they may have referred to essentially the same elements of the SCS process we discuss here. In this Overview, and in the Handbook, we have explained the principal terms used to clarify our meaning; but we readily admit that ours are not the only valid definitions.

With these qualifications in mind, we recommend that a SCS contain a Status Review, with a Vision and Goals for saving the species, Objectives that need to be met to achieve the Goals, and Actions that will accomplish those Objectives. The steps involved in preparing a SCS follow a logical framework approach, and can be summarised as follows:

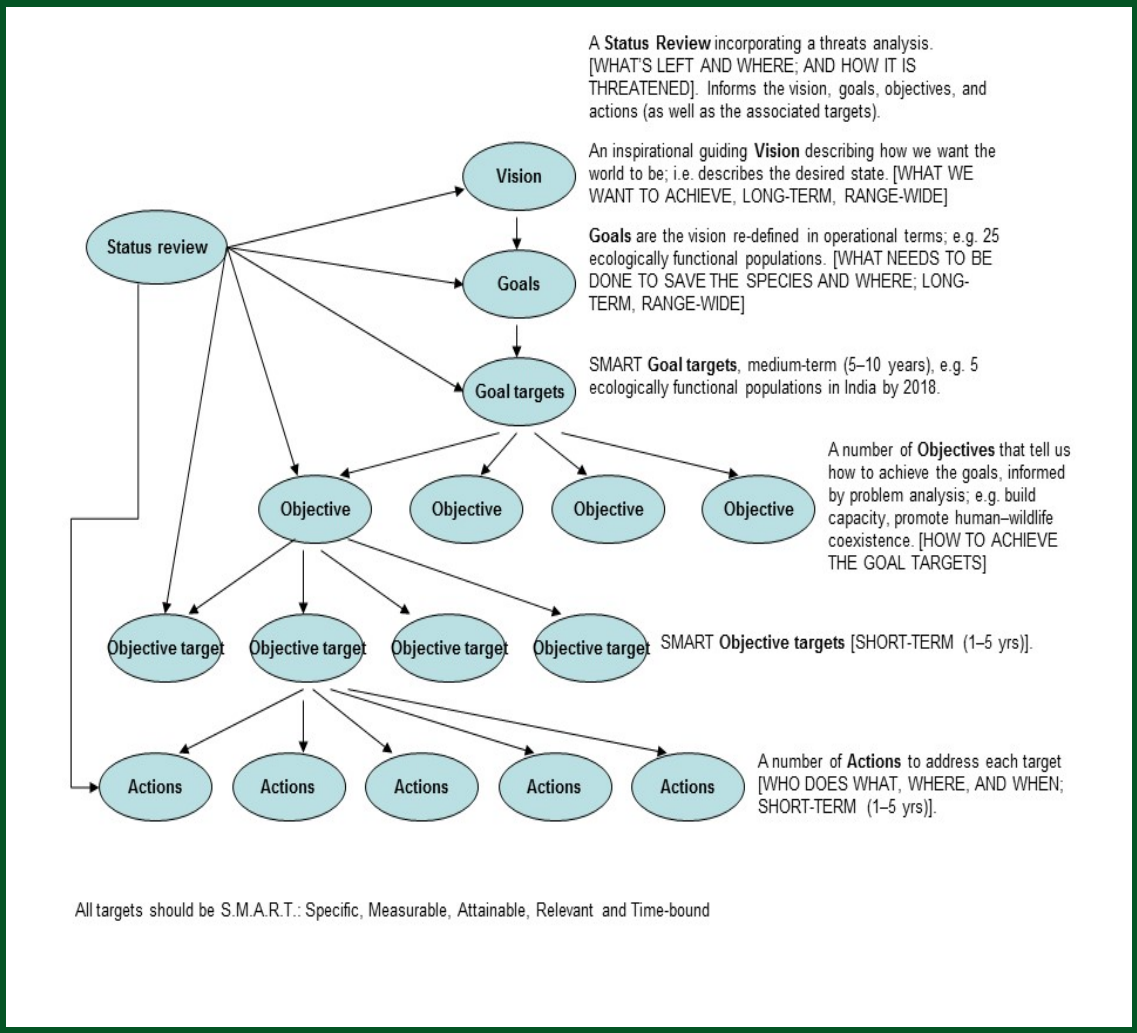
- Compile and refine a range-wide Status Review (incorporating a threat analysis), both in preparation for and at a workshop (or workshops) involving species specialists and other stakeholders (see Chapter 6). This Status Review defines the historical and current distribution of the species, states population sizes (or at least gives some measure of relative abundance), evaluates population trends, and identifies losses and threats. The Status Review should, where available, be informed by the appropriate Red List Assessment(s) and supporting documentation from the Red List Unit of the IUCN Species Programme and the Species Information Service (SIS). The completed Status Review should also in turn feed back into the Red List process.

- Formulate a range-wide (or in some cases a regional) Vision, which is an inspirational description of what participants want to achieve (a description of “the desired future state” for the species) and a set of associated Goals. The Goals capture in greater detail what needs to be achieved, and where, to save the species (see Chapter 7). The Goals are the Vision rephrased in operational terms. Both the Vision and the Goals have the same broad, long- term, spatio-temporal scale. The [long-term] Goals should have concrete Targets associated with them, which are a medium-term (typically 5–10 years) subset of the Goals [they can also be thought of as short-term goals]. Goal Targets [short-term goals] represent those Goals (and/or the necessary steps towards those Goals) that can realistically be achieved over the lifetime of the Strategy. Like all targets, Goal Targets should be SMART

- Compile a set of Objectives needed to achieve the Goal(s) over the stated time-span. Objectives must address the main threats identified in the Status Review process and each Objective should also have one or more SMART Targets (see above). This part of the process further identifies the obstacles to achieving the Vision and Goals. In fact, Objectives can be thought of as the inverse of threats, problems, and constraints. They are statements of what would need to be accomplished to result in a reversal of or halt to the threats (see Chapter 8). Objectives are typically developed using a combined threat analysis and a broader problem analysis (see Chapter

• Decide on Actions to address each Objective Target. Actions are the detailed steps that lay out what needs to be done, where, and when (see Chapter 9). They are short-term (typically 1–5 years).

The hierarchy of the components of a Species Conservation Strategy are shown below:



4.1.7. Targets

A target refers to **a measurable step that describes what needs to be accomplished to meet a goal or objective** (see Box 3). Progress towards meeting targets is tracked using indicators (see Section 4.1.8 & 5.3.10.2) and together the indicators and targets make it possible to assess whether an action or set of related actions have been successful, or whether the actions are failing or underperforming.

Targets should always be SMART (Specific, Measurable, Achievable, Realistic, and Time-bound). Boxes 3 and 4 provides examples of typical targets and advice on how to ensure targets are SMART.

Box 3: Example: Extract from the IUCN/SSC Conservation Strategy for Wild Cattle and Buffaloes in Southeast Asia (2008) to show the targets associated with an objective

Objective:

1 Maintain and, where appropriate, expand the area of wild cattle and buffalo habitat, and increase the proportion of that habitat that is well managed, to ensure the viability and ecological functionality of wild cattle and buffalo populations.

Objective Targets:

1.1 Well managed protected areas with priority populations of wild cattle and buffaloes maintain, or where appropriate, improve, their management standards by 2019.

1.2 Appropriate management practices developed for other priority protected areas with wild cattle and buffaloes by 2019.

1.3 Appropriate management practices implemented for existing second priority protected areas with wild cattle and buffaloes by 2023.

1.4 Potential, currently unsecured, wild cattle and buffalo habitat assessed by 2023.

1.5 Unprotected habitat put under appropriate management by 2023 (and beyond).

Box 4: Extract from IUCN (2008a), ensuring targets are "SMART"

"Objective Targets should be SMART (Specific, Measurable, Achievable, Realistic, and Time-bound). The SMART acronym was introduced in relation to Goal Targets, but is equally applicable to Targets at the Objectives level. The components of the SMART acronym are as follows:

- **Specific.** Objective Targets should be defined in sufficient detail, and written in such a way, that (a) an explicit outcome is stated and (b) it is clear that action is needed to achieve this outcome. For example, the Strategic Plan for the Conservation of Asian Wild Cattle and Buffaloes in Southeast Asia includes an Objective Target requiring "Surveys using appropriate peer reviewed methods to measure population size and trend conducted in priority sites by 2023". This Objective Target is specific in that it states clearly what needs to be achieved (surveys of population size and trends need to be completed), how (using appropriate peer-reviewed methods), and where (in priority sites [which are identified in the strategy]).

- **Measurable.** Objective Targets should be measurable, so that it is clear when they have been met. In the example given above, the Objective Target is measurable since it will be apparent when the surveys have been completed.

- **Achievable**. If the Targets are too ambitious, then they are unlikely to be achieved, and people working towards them may lose motivation. In assessing whether or not an Objective Target is achievable, it may be helpful to consider whether others have achieved something similar in a comparable timeframe. It is also helpful to ensure that there are no insurmountable obstacles to achieving the Target, such as civil unrest. In the example given above, the Objective Target is considered to be achievable because the surveys of population size and trend are restricted only to priority sites, not to all sites where the species occur.

- **Realistic.** An Objective Target may be achievable because it could be attained in principle, but not be realistic because there are insufficient resources (e.g., money, skills, or commitment) available, or there is no chance of obtaining them.

- **Time-bound.** Each Objective Target should specify the time within which (or the date by which) the Target should be reached. Setting a deadline creates a sense of urgency because there is a clear date by which the Objective Target should be met. It also makes the Objective Target measurable. As noted above, timelines can be used as a way of prioritising among Objective Targets, with shorter timelines given to Targets addressing more urgent threats (though timelines should not be so short as to make the Target unachievable or unrealistic). The timeline for each Objective Target should be less than, or equal to, the timescale for the SCS [NEAP] as a whole."

4.1.8. Monitoring and evaluation

The Monitoring & Evaluation Framework for implementing NEAPs is a separate manual that covers:

- The theoretical background of Adaptive Management;
- The Indicator Framework together with examples of indicators used for NEAP implementation;
- The Monitoring and Evaluation Framework with the reporting cycle, and
- The M&E Matrix that is used to guide the evaluation of results and impacts (EPI, Monitoring & Evaluation Framework, 2019).

These subjects will be dealt with briefly below, but for more detailed information we refer the reader to the above manual, also found on the EPI website.

Rarely, if ever, will the available data, and the abilities of those preparing and implementing a NEAP to predict and control the future, be adequate to guarantee that a NEAP, when first developed, will achieve the desired outcomes for a country's elephants without subsequent revisions. For this reason, adaptive management (Walters 1986; Parma *et al*. 1998; McCarthy & Possingham 2007; Lyons *et al*. 2008) has to be integral to the NEAP approach. A NEAP, therefore, needs to include a monitoring and evaluation framework, including a process for monitoring progress of the NEAP's actions/activities and whether the relevant targets for each action or set of related actions have been met. More generally, the NEAP process needs to include a mechanism for continuing review and refinement. This mechanism should include ongoing compilation and review of data on the status of elephants (abundance and distribution), data on threats to elephants and their habitat in the range State, and data on the efforts taken to address the threats and build conservation and law enforcement capacity. Periodic meetings of any NEAP Coordinator and National Elephant Action Plan Coordination Committee (see Section 6) should be seen as a vital component of adaptive management (see Box 5 for an explanation of adaptive management).

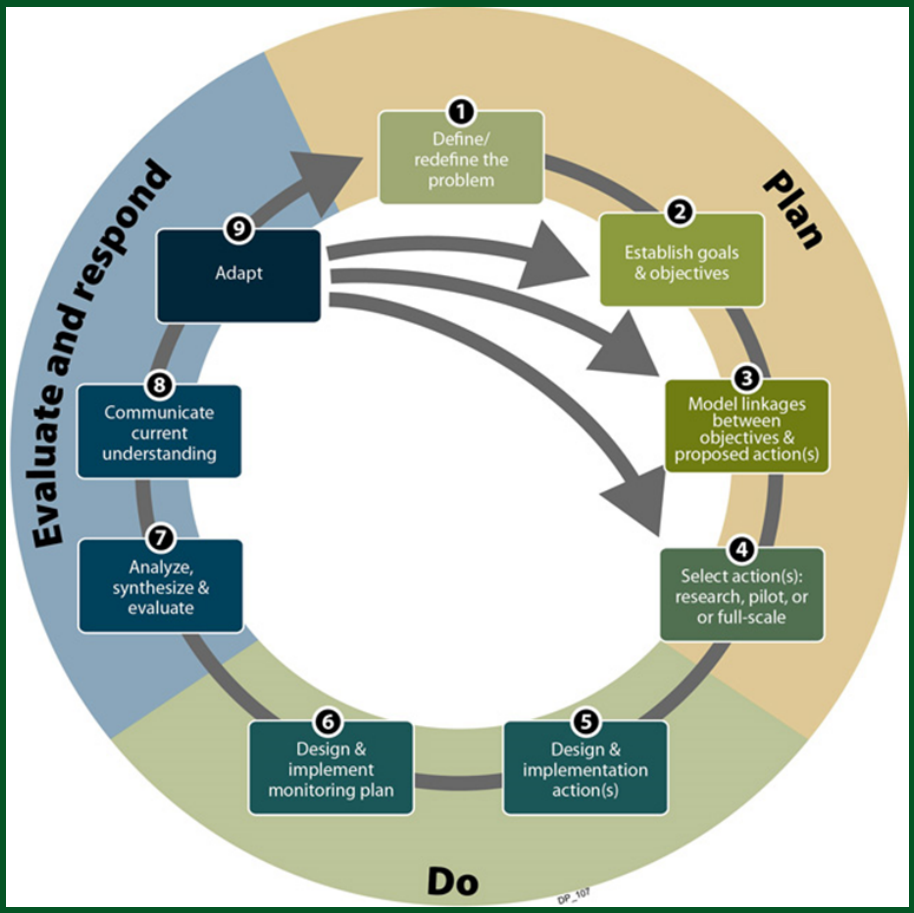
For measuring change – that is assessing progress towards the achievement of intended outputs (short-term targets of actions and activities) and outcomes (medium-term targets of objectives) – we use indicators. Indicators can be classified into output indicators that tend to be short-term in nature and are primarily useful as indicators of progress, and outcome indicators that tend to be longer-term than output indicators because they typically require more time and effort to assess (for a detailed explanation see 5.3.10.2).

For public presentations of progress with NEAPs, a relatively small number of simple to understand indicators is typically preferable to a large set of more complex ones. However for interactions with donors, partners, and policy-makers, more complex indicators will sometimes be appropriate. So, for example, for public consumption "proportion of key sites where anti-poaching work is underway" is likely to be preferable to a finer breakdown into types of anti-poaching work (e.g. numbers of places with intelligence networks and numbers of places with aerial support for law enforcement). A more detailed breakdown will, however, be of use when designing programs with partners, e.g. NGOs and government or private donors.

Priority should be given to outcome indicators as they become available they tell us whether we are succeeding in our conservation efforts or rather than just conducting activities. Nevertheless, output indicators are useful as well, because they allow progress or lack thereof with project implementation to be assessed in the short-term and appropriate steps to be taken if targets are not being met.

Box 5: What is adaptive management (Source: EPI Monitoring & Evaluation Framework)

In its most simple form, adaptive management may be defined as a systematic approach for improving resource management by learning from management outcomes. Adaptive management is a framework and flexible decision-making process for monitoring and evaluation that leads to continuous improvements in implementation of an action, activity, a project or program to achieve the desired objectives. It provides a structured process that allows for taking action based on monitoring and evaluating outcomes, and re-evaluating and adjusting decisions as more information comes available. The framework that the EPI is using encompasses three phases: **Plan, Do,** and **Evaluate and Respond:**



In terms of NEAP development and implementation we can subdivide the 3 phases as follows:

PLAN: NEAP development through a series of stakeholder workshops, in which participants define the problem through a threats and constraints analysis, based on which a series of 8 objectives are formulated, aligned to the AEAP, that address each of the threats and constraints identified. The last step is for workshop participants to formulate sets of actions and activities for each of the 8 objectives that are most likely to lead to realizing these objectives.

1. Define the problem: Carry out a Status Review and Threats Analysis to define the problems and constraints.
2. Establish Vision, Goal and Objectives: Based on the Status Review and Threat Analysis we define a long-term Vision (100 years) that describes the desired future state for elephants and their relationship with people, as well as a shorter-term Goal (10 years) that redefines the Vision into an operational overarching objective. Realizing the vision and goal of a NEAP requires addressing a number of problems and constraints. The objectives specify the approaches to be taken to overcome those problems and constraints. Each of these objectives has a SMART target, to measure progress in achieving the objective.

3. Establish linkages between the (8) Objectives and formulate Actions to achieve the Objectives. The combined Objectives should eventually lead to achieving the Goal, but to achieve the Objectives we first need to propose Actions that may lead to realizing the Objectives.

4. Select Actions: Propose and select actions that most likely lead to achieving a specific Objective, and broadly determine the Activities required for these Actions.

DO: During an implementation workshop, participants formulate actions and their respective activities in detail, including indicators and budget estimations. This information is summarized in an implementation plan, the 'living' part of the NEAP, to be regularly updated during review meetings.

5. Design and Implement Actions: Describe the Actions and their respective Activities in detail, including indicators to measure progress, and estimated budgets. Summarize Actions and Activities in an Implementation Plan, detailing brief methodology, verification (Indicators), responsibilities, timeline and estimated funds required. When funding is available, start implementation.

6. Design and Implement a Monitoring Program: Design and develop a Monitoring & Evaluation Program to track progress and to assist in adaptive management.

EVALUATE AND RESPOND: During review or other meetings, with all implementing stakeholders present, analyse progress of NEAP implementation, evaluate and adapt where necessary.

7. Analyse, Synthesize and Evaluate: Use Indicators to analyse progress in implementation.

8. Communicate current understanding: Discuss progress with stakeholders involved, for instance during regular review meetings.

9. Adapt: If progress towards achieving the Objectives is not running according to plan or expectations, adapt the design.

4.1.9. Implementation plan

All EPI States' NEAPs must include, in the form of an annex, a detailed short-term (typically 3-year) implementation plan. The implementation plan is the most important part of the NEAP because it includes detailed actions/activities, methods, targets, and monitoring and evaluation plans. For range States that are not EPI States but are nonetheless using the guidelines in this manual to produce NEAPs, it is still strongly recommended that implementation plans in the form of annexes to the NEAPs are produced according to the principles contained in Section 5.

4.1.10. The review process for draft NEAPs

Any NEAP is likely to be a complex document because it will need to cover a wide range of subjects; protecting elephants from poachers (law enforcement), conserving elephant habitat (land-use planning), reducing human–elephant conflict through mitigation and prevention, and limiting the human-elephant interface through spatial planning at different administrative levels, involving local communities in wildlife management and conservation by establishing conservancies, strengthening community-based tourism, building national capacity for elephant conservation and management, and many other things depending on the situation in that particular range State. It is therefore essential that any NEAP is thoroughly reviewed by the relevant national authorities and experts and ideally by international experts too, and allowing for such a review will help facilitate "buy in" when the NEAP is finalized and is being implemented. It is strongly recommended, therefore, that copies of the draft NEAP, including the implementation plan, are circulated to all NEAP workshop participants (if the NEAP was produced in a workshop environment) and other relevant national and international experts, including members of the IUCN/SSC African Elephant Specialist Group (AfESG). If so required, the EPIF can support the reviewing process.

4.2. Using existing strategies or plans to prepare a NEAP

If a reasonably up to date national strategy or action plan for elephant conservation already exists for a State then it should be considered a key source – together with the AEAP (and any NIAP) – for the preparation of the NEAP. In such cases, the NEAP could take the form of:

1. A compilation of the relevant sections of any existing national plan or strategy (updated as necessary), complemented with newly developed information and sections that were missing, fully aligned to the 8 generic objectives of the AEAP, and presented in such a manner that their relation to any NIAP as well as the EPI's aims, is made clear.
2. A newly-prepared implementation plan, included as an annex, that provides detailed actions/activities, methods, targets, and monitoring and evaluation plans, and which describe how the various national actions/activities will meet the aims and objectives of the AEAP, any relevant NIAP, and the EPI (for EPI member States).

The following basic steps should be used as a guide to preparing a NEAP from an existing action plan or strategy:

Step 1: Prepare or revise (as appropriate) a review of the status of elephants in the range State if no up-to-date status review is available.

Step 2: Conduct or revise (as appropriate) a threat and constraints analysis if no up to date analysis is available.

Step 3: Use the ICCWC Wildlife and Forest Crime Analytic Toolkit (ICCWC Toolkit; see below) to conduct a problem analyses relating to wildlife crime in the range State.

Step 4: Adapt the existing vision and goal, align the objectives to the 8 generic objectives of the AEAP (and/or other relevant components) in the national plans/strategies as appropriate, adding or modifying language if needed to ensure compatibility with the AEAP, any NIAP, and the aims and criteria of the EPI.

Step 5: Develop a detailed implementation plan containing all necessary short-term (typically 3-year) actions and related activities. This will include adapting actions/activities, targets, and monitoring and evaluation plans if such exist ensuring compatibility with the aims and objectives of the AEAP, any NIAP, and the EPI (for EPI States). For indicators specific to wildlife crime (e.g. illegal killing of elephants and trafficking in ivory), consider using the ICCWC Indicator Framework for Combating Wildlife and Forest Crime (ICCWC

Indicator Framework; see text below and Glossary), or alternatively use the example indicators provided in Annex 7. Include the detailed implementation plan as an annex.

If the existing national action plans or strategies were prepared in a participatory workshop environment or similar participatory process, it may not be necessary to hold another workshop involving large numbers of stakeholders. Instead, a small meeting of key government staff and elephant specialists from other countries (if appropriate) may suffice. If a participatory workshop is considered desirable or necessary, the IUCN/SSC booklet “Strategic Planning for Species Conservation: A Handbook” (IUCN/SSC 2008a) provides general advice on running national action-planning workshops (see especially Chapter 9 of the Handbook).

For indicators of progress specific to wildlife crime (e.g. illegal killing of elephants and trafficking in ivory), those preparing a NEAP should consider using the ICCWC Indicator Framework for Combating Wildlife and Forest Crime (ICCWC Indicator Framework). The ICCWC Indicator Framework has been developed to work alongside the ICCWC Toolkit (see Glossary) and provide an additional assessment tool for use at a national level. While the ICCWC Toolkit provides the means for a comprehensive analysis of the main issues related to wildlife crime in a country, the ICCWC Indicator Framework allows for a more rapid assessment of a national law enforcement response to wildlife crime. The ICCWC Indicator Framework is a comprehensive set of 50 indicators arranged against eight desired outcomes of effective law enforcement to combat wildlife crime. It is in the form of a self-assessment framework, which is best completed through a collaborative process involving all relevant national law enforcement agencies. The Indictor Framework also provides a standardized framework to monitor any changes in national law enforcement capacity and effectiveness over time and if used regularly (say every 2–3 years) it can be used by a NEAP Coordinator and National Elephant Action Plan Coordination Committee to monitor progress with implementing a country’s NEAP. The ICCWC Indicator Framework for Combating Wildlife and Forest Crime is available at https://cites.org/sites/default/files/eng/prog/iccwc/ICCWC-Ind-FW-ASSESSMENT-GUIDELINES-FINAL.pdf.

As mentioned above, alternatively, the example indicators on wildlife crime provided in Annex 7 can be used to monitor NEAP implementation.

4.3. Selecting participants for NEAP workshops and meetings

Participants in NEAP workshops or meetings should be those stakeholders most likely to be directly involved in implementing the NEAP as well as those stakeholders whose activities may impact implementation of the NEAP. This may include stakeholders active in elephant population or habitat management, combatting wildlife crime such as poaching and trafficking, capacity development, relevant local communities, tourism industry, land-use and development planners, extractive industries, research, policy development, fundraising, or others. In practice, this means that participants will include representatives from the country’s wildlife authorities including protected areas managers, the relevant communities, the tour operators, the police, judiciary, customs agencies, land-use and infrastructure planning departments, key industries, national and international NGOs, as well as researchers and others able to make a practical contribution to the development and implementation of the NEAP.

5. The NEAP Annexes

5.1. The implementation plan (IP)

All EPI States' NEAPs must contain implementation plans that describe in detail the objective and target, proposed actions/activities, methods, priority ranking, responsibility, verification, funding situation, and timeline, as well as monitoring and evaluation plans following the format described here. It is strongly recommended that non-EPI range States using the process described in this handbook also include implementation plans of the type described here.

Actions/activities are those things which need to be done in order to achieve the NEAP's (and thus the AEAP's) objectives and, ultimately, its goal and vision. Proposed actions/activities are likely to be diverse, including such things as elephant population monitoring (Annex 8) and regular law enforcement patrols using the SMART system (Annex 6) to effectively protect elephants and their habitat, creation of intelligence networks around key protected areas, inventories of ivory stockpiles, and the like.

The actions/activities included in a NEAP's implementation plan will be most useful if they are as specific as possible, detailing what needs to be done, how ("methods"), by whom (responsibility), where (scope), and when (i.e. by what date or over what timeframe). In other words, the implementation plan must be SMART, i.e. Specific, Measurable, Achievable, Realistic, and Time-bound.

It will often be useful to attach priority rankings to the actions/activities and, in any case, it is a requirement of the EPI Foundation that the highest priority actions in an EPI State's NEAP are identified and provided as a list in the Executive Summary.

The detailed implementation plans should be included as an annex to every NEAP because doing so allows for easy updating of a NEAP without having to modify the body of the document. For example, as actions are completed or new actions identified as being necessary, the implementation plan annex can – and should – be updated because doing so will help keep the NEAP a "living document" that can be used by the country's authorities and their partners to monitor the progress of elephant conservation in the country.

For easy use by national wildlife agencies, other government departments and partners, an IP as a simple Word table is the most appropriate, because it can be easily inspected, updated, and printed. A disadvantage however is the limited amount of space, which advocates for the use of an excel spreadsheet that allows incorporation of more detail. However, a heavily populated spreadsheet does not lend itself to printing, and eventually both alternatives need to be used. Box 6 provides an overview of the information that may be incorporated when using a spreadsheet, whereas an example of a simple IP Word template is provided in Annex 2. For the Implementation Plan (IP) the same numbering for objectives, targets, actions and activities should be used as in the NEAP. This alignment facilitates cross-referencing for each activity, across the 2 components of the NEAP; i.e. the Action Plan (main body of text), and the IP.

Box 6. Implementation Plan details when using a spreadsheet

- Objectives, Targets, Actions and Activities (Numbering)
- Cross reference with numbering NEAP, AEAP and NIAP
- Priority Ranking: 1 = highest – 5 = lowest
- Action/Activity; Provide summarized description
- Verification: Output Indicator
- Progress Status: Finalized, Underway, Partially Underway, or Planned
- Funding: Secured/Required
- Who is Responsible: Lead Agencies/NGOs & Supporting Agencies/NGOs
- Geographic Scope: Where exactly?
- Methods: Summarized but concise
- Indicators: Output and Outcome Indicators
- M&E Plan: See EPI M&E Framework

5.2. Timeframe for NEAP implementation plans

It is recommended that the implementation plan covers at least a 3-year period and no longer than a 5-year period; if the period covered is too short new plans will have to be prepared too often (wasting time and resources), and if the period is too long it is difficult to provide the necessary level of detail.

5.3. Structure and format of NEAP implementation plans

5.3.1. Introduction

The most appropriate structure for a NEAP's implementation plan is to have one annex covering all the actions and activities needed in the typically 3-year period covered by the implementation plan. Having one plan allows all those responsible for implementation to see "at a glance" what needs to be done (see Annex 2).

5.3.2. Cross referencing the implementation plan with the body of the NEAP

The reference numbers for the 8 objectives (aligned to AEAP), targets, and actions/activities in the body of the NEAP, which are referenced in the implementation plan, should be clearly identified in the implementation plan annex (cross referencing).

5.3.3. Relationship to any NIAP

For those States with a NIAP, identify the NIAP objective or actions/activities related to every action/activity in the NEAP implementation plan.

5.3.4. Actions/activities

All the actions/activities that are already underway as well as those that are planned for the period covered by the implementation plan need to be included in the implementation plan annex. Each action or set of related actions requires a target and an outcome indicator.

5.3.5. Methods

The methods and approaches that will be used to deliver the actions/activities should be briefly described, but as concise as possible.

5.3.6. Priority ranking

A clear system of ranking actions/activities by priority should be used when developing the implementation plan (1 = highest – 5 = lowest). One possibility is to have all the participants in any NEAP workshop vote for the highest priority actions. In any case, the highest priority actions should be identified in a State's NEAP implementation plan. Joint rankings are possible. **A list of high-priority actions that urgently require funding should be provided in the Executive Summary of a NEAP**.

5.3.7. Who is responsible?

The lead agencies or other organizations (such as NGOs) responsible for implementing each action/activity should be identified as should any supporting agency or organization.

Please note that if no organizations have committed to an action/activity then that should be indicated in the implementation plan (e.g. by writing "no agency identified yet" or "Police Dept suggested (but agreement needed)" in the appropriate "Responsibility" column. Doing so will allow for a "gap analysis" showing which actions have no implementing agencies currently taking responsibility.

5.3.8. Verification (progress)

Under verification we provide the output indicator for this particular activity, often simply indicating the activity was finalized, report available or circulated, number of staff trained, etc. The status of an activity needs to be identified as either "finalised', "underway", "partially underway", or "planned".

5.3.9. Geographic scope

Where the actions/activities will be done should be clearly identified, specifying, for example, "national" if the action will cover the whole country, landscape, or the names of the protected area(s) or other places where the action will be implemented. Although there is no specific column for this in the template (Annex 2), scope may be indicated under "Method".

5.3.10. Monitoring and evaluation plans

5.3.10.1. Overview

All EPI member States' NEAP implementation plans must contain a monitoring and evaluation plan covering every action/activity. Monitoring and adaptive management (see Box 5) are key requirements for an effective action plan. Monitoring and evaluation should be seen, therefore, as an integral part of all objectives, actions and activities and not as a luxury "add on" or afterthought (see Section 5.1.8 and EPI's Monitoring & Evaluation Framework manual (EPI, 2019) for further guidance).

The monitoring and evaluation plans comprise targets with outcome indicators for every objective and action or set of related actions, and output indicators for every activity or set of related activities, as means of verification. Output indicators for activities come under the column “Verification” in the implementation plan. Targets and outcome indicators for objectives and actions or sets of related actions should be entered in the second row and first column respectively (see Annex 2). The agencies and organizations listed as responsible for the action/activity in the implementation plan should also be responsible for compiling the means of verification (data, reports, etc.) and for compiling the metrics but, in addition, an independent higher authority such as any NEAP Coordinator or National Elephant Action Plan Coordination Committee should also review the metrics (indicators) and means of verification on a regular basis. A summary of stakeholders and their M&E responsibilities is provided in Box 7, while Appendix 4 provides a simple log-frame for summarizing actions and activities and their means of verification, while the Monitoring & Evaluation Framework manual (EPI, 2019) contains an example of a M&E Framework Matrix that can be used for monitoring progress and for adaptive management.

5.3.10.2. Indicators

The NEAP implementation plan must include indicators for each objective, action or set of related actions, activity or group of related activities as appropriate (see Section 4.1.8 and the Monitoring & Evaluation Manual (EPI, 2019)). Two different indicators are required: output indicators and outcome indicators:

1. **Output indicators** are designed to be primarily useful as indicators of progress (i.e. they tell us whether activities have been implemented to a useful extent), and they allow national and local government staff, NGO partners, and donors to keep track of a State’s progress in implementing a NEAP. They tend to be short-term in nature. Examples of output indicators include “number of patrols completed per month in priority sites” and “number of elephant population surveys completed in priority sites”.

2. **Outcome indicators** tend to be longer-term than output indicators because they typically require more time and effort to assess; they are essential, however, because they tell national and local government staff, NGO partners, and donors whether the NEAP’s targets have been met and ultimately, therefore, whether those charged with implementing the NEAP are being successful in conserving the State’s elephants. Examples of outcome metrics include “Proportion of Illegally Killed Elephants (PIKE) in key sites” and “Elephant population size or trend in key sites” (PIKE is the CITES/MIKE program’s measure of elephant poaching rate; see Appendix 5; For monitoring elephant population size and trend; see Appendix 8).

Both output and outcome indicators need to be included in EPI States’ NEAP implementation plans. It is expected that elephant population size, trend and poaching rate (PIKE) will be key outcome metrics in all EPI States’ NEAPs, with appropriate targets related to PIKE and elephant population trends set, with appropriate resources allocated for the necessary survey and monitoring work.

Box 7. Summary of stakeholders and their M&E responsibilities (Source: EPI 2019).

Stakeholders	M&E Responsibilities
Wildlife authorities	In the absence of a NEAP Coordinating Committee, frequently the wildlife authority has the responsibility of coordinating NEAP implementation and M&E: 1. Prepare annual work plan and budget 2. Review progress reports and propose adjustments 3. Analyze, evaluate and prepare results in terms of Output and Outcome indicators, which includes Targets, to present during the annual NEAP Review Meeting 4. Check M&E plan and organize NEAP Review Meetings annually 5. Liaise with donors to source financing for NEAP activities
NEAP Coordinating Committee	If a NEAP Coordinating Committee is in place, it will fulfil the same responsibilities as outlined above for the wildlife authorities, but the Committee should still seek approval on decisions from the wildlife authority who assume final responsibility.
NEAP Coordinator	Day-to-day coordination of NEAP implementation, reporting to the wildlife authority and/or to the NEAP Coordinating Committee: a) Regular contact with all stakeholders active in NEAP implementation b) Monitor annual work plans and output indicators c) Propose appropriate support or corrective measures when progress is not according to plan d) Prepare progress reports (every 3 months) and annual report e) Review and update the M&E plan annually for evaluation during the annual NEAP Review Meeting f) Provide support in participatory M&E and for the design of impact assessments
Annual NEAP Review meeting	The annual NEAP Review meeting should bring together all stakeholders to evaluate progress in implementation of the NEAP and propose adjustments when Outputs and/or Outcomes deviate from the original plan: 1. Evaluate progress of the individual activities (Output) 2. Evaluate medium-term Outcome indicators (Objectives) 3. Evaluate progress towards achieving the Goal (long-term) 4. Discuss adjustments when required (adaptive management) 5. Update Implementation Plan (activities accomplished and those underway and planned, as well as budgetary requirements)
Stakeholders	All stakeholders (NGOs, INGOs, Government, and Private Sector) should regularly communicate with the NEAP Coordinator or the contact person from the wildlife authority to discuss progress of activities, projects and programs being implemented, providing updates on short-term Output indicators as well as information for medium-term Outcome indicators. Stakeholders should be requested to provide formal, written updates on all activities they are implementing under the NEAP in a timely manner as requested by the NEAP coordinator ahead of the Annual Review meeting. All key stakeholders should be invited to and participate in the Annual Review meetings.

Annex 7 provides examples of the most frequently used output and outcome indicators for NEAP implementation (EPI, 2019). Because nearly all of the NEAPs are fully aligned to the African Elephant Action Plan (AEAP), outcome indicators are provided for each of the 8 generic objectives of the AEAP, with some examples of output indicators for activities. It should be noted that indicators are presented in order of complexity, whereby the indicators that require moderately complex datasets should only be used when

accurate data and the manpower and the budget to analyse these data are available, and when management has the expertise to use the results to adapt law-enforcement strategies. Processing data for the sake of analyses or as an academic exercise is an expensive and labour intensive undertaking that will not aid adaptive management. Also, it is advisable to start monitoring by using simple indicators only, to increase complexity if and when required and appropriate. The table describes indicators as 'simple' or 'complex' depending on the data required to measure them (see Annex 7). Note that for all outcome indicators, baselines should be available at the year the NEAP becomes officially active (we need to measure change in relation to a baseline).

5.3.11. Means of verification

The means of verifying whether an action or activity has been implemented and to what extent must be specified in the implementation plan, by using simple output indicators, often merely indicating whether a plan is available or a system is in place (sometimes referred to as traffic-light indicators). Examples of typical means of verification (output indicators) include:

- Receipts for equipment purchased and evidence that it has been disbursed;
- the data from and reports on any relevant training work, patrols, and surveys;
- checks of any relevant databases (e.g. SMART databases);
- site visits to verify activities are being conducted, and staff and equipment are in place; satellite imagery and ground-truthing to assess elephant habitat integrity;
- data on prosecution rates and sentencing of poachers and traffickers; and
- data on human–elephant conflict rates and severity.

5.3.12. Funding

Finally, whether an action or activity has secured funding or not should be indicated in the implementation plan. Identifying whether funding is currently secured, only partially secured, pending, or not available, together with identifying whether implementing agencies have been agreed or not, allows for a "gap analysis" showing which actions/activities have no implementers and/or funding identified and thus helps identify priority actions for funding.

5.3.13. Timeframe

A timetable indicating when an action/activity will be done within the overall period covered by the implementation plan (typically three years) is required.

6. Coordinated, effective and timely implementation of a NEAP

It is often helpful for a range State to have a: NEAP Coordinator who is responsible to the relevant range State Government's Minister(s) for implementation of the NEAP; a National Elephant Action Plan Coordination Committee (NEAPCC), whose responsibilities include promoting the NEAP, monitoring implementation of the overall NEAP, and assessing progress with the NEAP's (regularly updated) 3-year implementation plan; a NEAP Advisory Group, formed of representatives from all organisations assisting the Government in NEAP implementation (NGOs, INGOs, university staff, civil society, etc).

Without a NEAP Coordinator, the NEAPCC should be responsible to the relevant range State Government's Minister(s) for implementation of the NEAP. All EPI range States will have an EPI National Focal Point responsible for effective communication with the EPI Foundation.

National Elephant Action Plan Coordination Committee (NEAPCC)
Membership of any NEAPCC (or similar body) should ideally be constituted to ensure broad participation by representatives from all relevant government departments and other national agencies, not just the national agency responsible for wildlife. For example, senior representatives of the police, prosecution, judiciary and Customs should be encouraged to join the NEAPCC to help ensure effective efforts to combat trafficking in ivory and other wildlife crime. Similarly, senior representatives of government agencies responsible for land use planning should be included to help ensure a coordinated approach to elephant habitat conservation and the mitigation of human-elephant conflict. Ideally, any NEAPCC or similar body would meet at least two times per year to assess progress with implementing the NEAP and to make any recommendations necessary in a timely fashion.

NEAP Advisory Group
It is also often helpful if the NEAP Coordinator and any NEAPCC or similar body is supported by a NEAP Advisory Group, formed of representatives of NGOs, INGOs, university staff, civil society, and others involved in helping the Government of the range State implement the NEAP. For example, a NEAP Advisory Group could meet for a day or two before each meeting of the NEAPCC in order to prepare materials for the meeting and, especially, progress reports on all responsible organizations' and individuals' work to effect the 3-year implementation plan, paying particular attention to the implementation plan's means of verification, and targets.

7. Financing Wildlife Conservation

The final chapter deals with financing NEAPs through generic sources of funding, but also through some of the more contemporary financing modalities such as private and philanthropic funding, or Public-Private Partnerships (PPPs), a special case of blended finance. Blended finance is the term given to the use of public or philanthropic capital to spur private sector investment in projects aimed at achieving the UN SDGs. Here we discuss that nature conservation is not sufficiently integrated into health, development or security initiatives, or their financing. Thus, global financing for nature conservation should be scaled up to deliver multiple benefits, and be based upon a long-term commitment to wildlife-rich landscapes. Existing models to finance wildlife conservation are also briefly discussed, but we do not seek here to provide a wholly comprehensive list or debate.

7.1. Financing NEAPs

a) Generic sources of funding

Financing a NEAP in full can be challenging, given limited government resources and often complex procedures for attracting donor funding. Generic sources of funding apply to any organization that provides financial assistance to wildlife conservation or biodiversity activities in a country that is not of its origin. They may be established multilateral, regional or bilateral institutions or agencies, intergovernmental or non-governmental local and international organizations, foundations or corporations. Financial assistance may include grants, loans, scholarships and other services. In 2006, the Convention on Biological Diversity (UNEP) published an extensive catalogue of funding sources that may be consulted for a broad overview, while more recently they published a broad guidance note on Resource Mobilization Post-2020 (https://www.cbd.int/).

Seeking finance with bilateral and multilateral agencies requires strong partnerships between national authorities, such as the Ministry of Finance, and traditional and non-traditional donors. Although each EPI member State may have its own set of leading partners, which includes national and international non-governmental organizations, the EPIF will use its best endeavours to assist member states as well as partners in seeking funding for medium-term high-priority actions. Thus, NEAP activities that cannot be financed nationally through government budgets may be financed through either one or a combination of the following modalities: bilateral and multilateral donors, intergovernmental or non-governmental local and international organizations, foundations or corporations, international financial institutions such as the African Development Bank and the World Bank, but also through contemporary financing modalities.

However, because wildlife-based tourism revenue has always been a critical part of the financing of nature conservation, especially in developing countries, the loss of this source of revenue and related jobs during and possibly for a while post COVID-19 is seriously challenging wildlife protection efforts as well as our thinking about the conventional way of funding conservation. Well-managed protected areas deliver development, health and security benefits, while they provide security for people and wildlife and bring about stability and law and order. This establishes the enabling environment that can attract tourism, secure carbon, combat poaching, protect biodiversity, deliver on international commitments, create local jobs and provide good returns for investors, be they government, for-profit or philanthropic investors. Because the benefits of effective nature conservation extend well beyond wildlife and environment, including health, development and security benefits, so too must the sources of financing. The ultimate goal should be multiple projects, large and small, of any duration, being part of a larger overall planned and long-term effort, and where national and international efforts targeting biodiversity, climate, and sustainable development converge and deliver multiple benefits through the implementation of global conventions on biodiversity, climate change, trade in endangered species, international wetlands and World heritage, along with other related sustainable development goals and obligations under human rights conventions (J. Scanlon, 2020a&b).

b) Contemporary financing modalities; a few options

One option is blended finance - the term given to the use of public or philanthropic capital to spur private sector investment in projects aimed at achieving the UN SDGs. With increasing pressure to focus on the implementation of the SDGs, government is encouraged to consider greater use of private capital in wildlife conservation, either through long term park management concessions or by mobilizing private capital to upscale the wildlife tourist sector, which includes community-managed conservancies, as a means to increasing revenue flows.

Thus, innovative financial mechanisms such as blending, as well as conservation bonds, can be used to leverage private capital, possibly in addition to or in combination with some of the other financial opportunities available. Blended finance offers the possibility to scale up commercial financing for conservation in developing countries and to channel such financing toward investments with conservation impact. As such, blended finance is designed to support progress towards the SDGs. PPPs are a special case of blended finance, and although widely used these days, some PPP arrangements may present a couple of problems (Box 8).

Box 8. Potential pitfalls of PPPs

First, the bankers who arrange these "partnerships" are almost always far more conversant with the concept than those who sign the contracts, while specific expertise is required to evaluate a complex deal that may call for re-negotiations, modifications and subsidies from the host country. Second, PPPs may be more expensive than other forms of blended finance, with effective interest rates double that of government borrowing, while they also let politicians get an instant hit of cash flow, while leaving 20 to 75 years of payments, modifications and contract enforcement to their successors (Forbes 2018).

Conservation bonds are in essence contracts between the public and private sectors, in which a commitment is made to pay for improved conservation outcomes - that is government makes payments to private sector parties when conservation outcomes are achieved. Simply put, these are private sector equity investments with a corporate social responsibility component and therefore a different risk profile than more conventional investments. Conservation bonds are rather similar to social impact bonds or pay-for-success financing.

c) NEAP implementation; the SDGs and the AEAP

The international donor community as well as private and public institutions, are under increasing pressure to focus funding to support the implementation of the 17 SDGs and their targets. Given the potential impact of NEAP implementation on SDG 1 (End Poverty), SDG 2 (Zero Hunger), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 6 (Clean Water & Sanitation), SDG 8 (Decent Work & Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Ensure Sustainable Consumption and Production Patterns), SDG 13 (Climate Action), SDG 15 (Life on Land), SDG 16 (Peace, Justice and Strong Institutions), and, SDG 17 (Partnerships for the SDGs), an integrated approach should be adopted, whereby a NEAP must identify SDGs to which it contributes (as an example, see Annex I, Mapping the SDGs against the AEAP Objectives).

The African Elephant Action Plan (AEAP) was adopted in March 2010 at the 15th meeting of the Conference of the Parties to CITES. The document was developed in response to a Decision of the CITES Parties to develop such a plan and a fund to assist with its implementation. The Plan was developed over two years

through a consultative process, facilitated by the African Elephant Specialist Group (AfESG) and the CITES Secretariat. The AEAP is fully owned and managed by the African elephant range States, and outlines the actions that must be taken in order to effectively conserve elephants. Thus, the AEAP is a concise and clear statement of activities that most urgently require funding. Therefore, a critical part of seeking funding for the NEAPs is making sure that the prioritization and costing of activities being selected are aligned to the AEAP objectives, in other words, it is vital that NEAP objectives link to AEAP objectives.

d) Tourism & the value of elephants

Even when our thinking about the conventional way of funding conservation needs to change, among others incorporating development and climate change, wildlife tourism revenue has always been and will always remain an important source of funding for conservation. In many of the countries hosting large elephant populations, in the pre-COVID-19 period, tourism was a key driver for growth (WTTC). Such is the case in Kenya, which prior to COVID-19 had one of the fastest growing travel and tourism sectors in Africa and constituted the third largest tourism economy in Sub-Saharan Africa (WTTC). When considering wildlife-based tourism, elephants appear to be one of the key species in attracting tourists to a destination. Therefore, in order to revive the tourism industry once the pandemic is brought under control, it needs to be transformed by building resilience through adequate government responses, technology innovation, involvement of communities to instil ownership, and consumer confidence.

Although the practice of natural capital accounting is still in its infancy - that is in terms of mainstreaming biodiversity into national accounts – some progress has been made with estimating the value of live forest elephants through their contribution to natural carbon capture (Chami *et al.*, 2020; Box 9). In general terms, however, little progress has been made and very little empirical data on the value of natural capital exist. This would first require improving the measurement of ecosystems and their services, both in physical and monetary terms at both national and subnational levels, to then mainstream biodiversity and ecosystems policy planning and implementation.

Box 9. The value of elephants

African elephants not only have immense value when it comes to attracting tourists to a destination, but forest elephants also fight climate change by contributing significantly to natural carbon capture. As forest elephants forage for food, they thin out young trees that are competing for space, water, and light. Because elephants are large and have big appetites, they dramatically reduce the density of the vegetation wherever they go. The trees that are left behind unbroken and unconsumed, however, have a huge advantage over other trees in the forest. They have much better access to water and light, thanks to the elephants' thinning of the surrounding vegetation, which means that they grow taller and larger than other trees in the rainforest. Wherever forest elephants roam, therefore, they promote the growth of larger, taller trees. These trees store more carbon in their biomass than the trees that would have grown in their place. Forest elephants thus actually increase the amount of carbon stored by the rainforest by tilting the biological balance in favour of certain types of trees. If we then take the total value of the carbon storage service provided by African forest elephants and divide it by their current population, we find that each elephant is responsible for service worth more than $1.75 million. On the other hand, the ivory of an elephant killed by poachers on average fetches only about $40,000, so it is clear that the benefits from a healthy and thriving elephant population are substantial (Chami *et al.* 2020).

7.2. Existing models to finance wildlife conservation

There are a few models in use for the conservation of wildlife and their habitats and to attract financing for these (EPI Vision 2030):

1. **National agencies** responsible for wildlife conservation with (part of) recurrent operational expenses financed through the government budget, but with varying degrees of dependency on external funding for capital expenditure and other activities.

2. Long term protected-area management **concessions** by private sector parties or the non-profit sector, such as NGOs, creating revenue mainly through tourism, with the aim to reduce dependence on external sources of funding over time.

3. Community-managed **conservancies**, either financed through PPPs or through varying modalities of external financial support, with revenue created through tourism and trophy hunting, also aiming to reduce external financial dependence over time.

4. Any combination of **national agencies, conservancies and concessions**.

National Agencies: Even with strong and transparent national agencies such as in Gabon and Kenya, and a flourishing wildlife-based tourism industry that in pre-pandemic times in some cases contributed as much as 10% to GDP and 11% of total work force (Kenya National Wildlife Strategy 2030), donor dependency remains high. During the current COVID-19 pandemic, mainly due to the loss of tourism revenue, donor dependency is and will be much higher for at least the next few years. Once the pandemic is under control and the tourism industry is slowly recovering, when feasible, a first step would be to modernize fiscal frameworks to increase tax returns that can be ploughed back into conservation. This may be an important step to at least gradually reduce some donor dependency.

Concessions: The model of long-term protected area concessions by private sector parties or the non-profit sector is also reliant on revenue creation through tourism, with strong external funding dependency in the initial stages of protected area takeover, but depending on local circumstances, frequently with gradually declining levels of donor dependency following the high-investment development phase of the site. As an example, in 2010, African Parks (AP) was invited by the Rwandan Development Board to help professionalise park management of the Akagera National Park and realise their vision of a functioning national park that would reap dividends for the surrounding communities. In 2018, just 8 years later, the park received 44,000 visitors, 50% Rwandan nationals, with USD$2 million in tourism revenue, achieving nearly 80% self-financing of the park (AP Annual Report, 2018). Akagera is a good example of how a well-managed protected area can deliver benefits that change people's lives, providing opportunities that would otherwise not be available, while creating an upward cycle of sustainability (AP Annual Report, 2018). African Parks pioneered the PPP model for protected area management, whereby they maintain full responsibility and execution of all management functions, but remain accountable to the owner – that is the government in question.

Both the German Legacy Landscapes Fund and the UK Biodiverse Landscape Fund seek to obtain significant and sustained funding from both public and private (philanthropic) sources, with the aim of filling the sustainability gap and thus contributing considerably to conserving biodiversity within a post-2020 framework. Both funds will finance long-term partnerships between experienced NGOs and protected areas authorities as well as indigenous and local communities in order to efficiently conserve and manage protected areas and their buffer zones through concessions.

Because concessions rely heavily on tourism income, this model is currently also experiencing challenges, but, once the pandemic has been brought under control and the tourism industry starts to pick up, depending on the range State and location, well-managed concessions may reach sustainability levels much sooner than any of the other models in use for conserving wildlife and their habitats.

Conservancies: Community-managed conservancies, either financed through PPPs or through varying modalities of external financial support frequently remain dependent on external funding for much longer periods than concessions. For example, in 1996, financing of the Lewa Conservancy (LWC) in Kenya was mainly covered by donations (71%), with only 29% coming from their own profit centres (funding ratio 2.45), mainly from tourism revenues. Twenty-two years later, in 2018, the funding ratio remained unchanged, albeit with external funds coming from different sources (LWC reports), which was partly due to the high cost of the endangered species program of LWC (LWC reports).

The rapid growth of the number of conservancies in Namibia outstripped the capacity of government and NGOs to respond to increasing demands for both technical and financial assistance that is required for much longer periods than initially anticipated (NASCO 2010). Due to these long-term costly support services, financial sustainability of the community conservancy program in Namibia has also been at risk (Box 10).

These examples from Kenya and Namibia show that the sustainability of community-managed conservancies requires long-term technical and financial support from all parties involved, which includes donor support.

Box 10: Financial sustainability of community conservancies in Namibia.

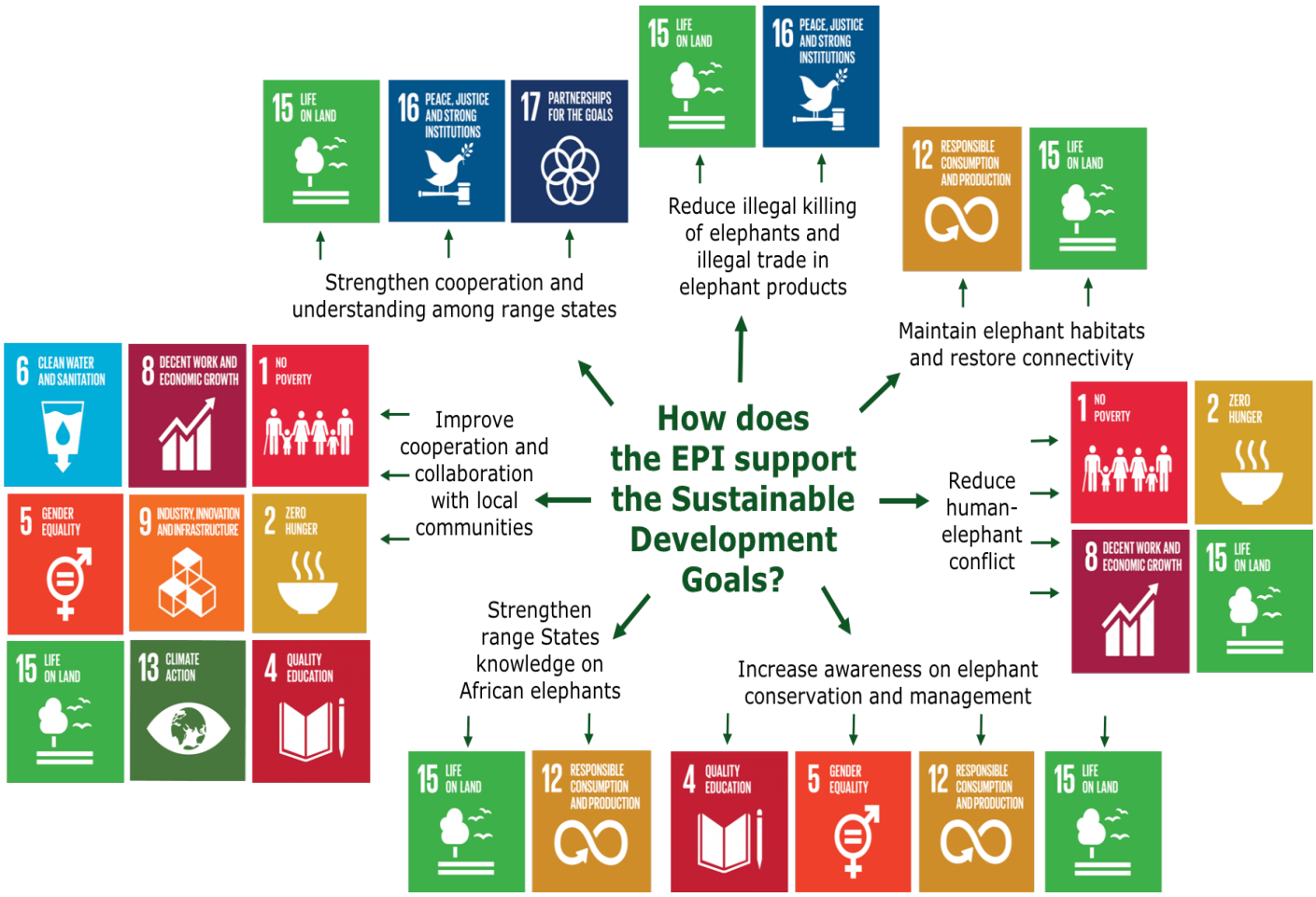
The 86 community conservancies in Namibia cover roughly 19.6% of the country. For most of these conservancies agriculture is still the main source of living, supplemented by income from subsistence and trophy hunting, as well as tourism. With livelihoods still depending on agriculture, and subsistence hunting ongoing, the Namibian conservancies are not as badly affected by COVID-19 than some of the other conservancies elsewhere on the continent that rely more heavily on tourism income for daily operations. However, even in Namibia, sustainability of the conservancy programme has been at risk. In 2010, the results of a study on sustainability of conservancies showed that there was a need to diversify and find more sustainable sources of funding for ongoing service provision (NACSO, 2010). Even well-established conservancies remained weak in key areas such as joint venture, business development and management, with long-term costly support services, while the aim for sustainability required a shift from a high investment development phase to a lower-cost maintenance phase. The rapid growth in the number of conservancies had outstripped the capacity of government and NGOs to respond to increasing demands for both technical and financial assistance. It was recommended that next to improving business operations and tourism developments, more public and private donor funds were required. Aimed at reducing dependence on external donor funding, in February 2020, the Community Conservation Fund of Namibia (CCFN) was launched. The CCFN will provide critical support services throughout the lifespan of the individual conservancies, including for mitigation of HWC. The Endowment Fund of the CCFN is capitalised from various sources, which includes donor support. As part of CCFN's Human-Wildlife Conflict funding window, the German government, via the KfW Development Bank, announced the inception of a US$ 4.5 million grant for human-wildlife conflict in 2020, specifically targeted at conservancies in Namibia. The Namibian government, through the environment ministry, CCFN and other partners has also committed various contributions to ensure that the project is a success.

Synthesis: Depending on a myriad of factors, among which the size of the PA estate, human densities, security, and accessibility/attractiveness of local nature-based destinations, the ideal situation may be a strong and transparent national agency with the ultimate responsibility for all forms of wildlife conservation in a particular range State. Wildlife conservation in protected areas may be supported by a series of concessions managed by a strong non-profit sector party using the PPP model for protected area management, whereby they maintain full responsibility and execution of all management functions, but remain accountable to the local wildlife authorities. These concessions require strengthening community involvement in wildlife management and providing alternative livelihood programs for communities living nearby the site. In cases where national agencies lack the required capacity or transparency, the presence of a strong non-profit sector party may positively influence the effectiveness of the local authorities in charge of wildlife management. On marginal lands with an important and attractive wildlife component, both from the perspective of biodiversity conservation and destination management, and for landscapes where people and wildlife share resources, community-managed conservancies may be established.

Moreover, project-based support, concessions and community-managed conservancies are collaborative management partnerships between national wildlife agencies and NGOs, but to varying degrees involving local communities, to attract investment and technical capacity to improve PA performance and biodiversity conservation in general. The three partnership models have their pros and cons, but provide funding that is considerably higher than baseline state budgets for PA management and landscape conservation. However, significant barriers may limit the scaling of these partnerships, constraints with NGOs and donors, and concerns of governments that they may represent an admission of failure, result in a loss of revenues, or undermine sovereignty (P. Lindsey *et al.*, 2021). However, governments should view these partnerships as strategic, proactive tools that will enable them to unlock funding, investment and expertise for conservation and make recommendations to attract such investments (Lindsey *et al.*, 2021). These partnerships will not only improve PA management, but also share the costs of protecting Africa's PAs and landscapes with the global community, build local capacity and assist in protecting the ecosystem services upon which Africa's economies depend, while stimulating rural development that will benefit local communities (Lindsey *et al.*, 2021).

Annex 1: Mapping the SDGs against the AEAP Objectives.

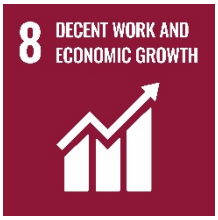
Implementing the Sustainable Development Goals (SDGs) by Funding the African Elephant Action Plan through the National Elephant Action Plans



African Elephant Action Plan Objective 1: Reduce illegal killing of elephants and illegal trade in elephant products		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan** **Actions - Notes**
	**15.5**: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020 protect and prevent the extinction of threatened species. **15.7**: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products. **15.a**: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems. **15.c**: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities.	**SDG 15** covers for all *Actions* and their respective *Activities* related to combating poaching and trafficking: i.e. SOPs, training & capacity building, field staff (including intelligence & investigations) evaluations, inventories & recruitment, equipment (including transportation and communication), infrastructure (including roads, buildings & water), and maintenance. **SDG 16** covers for all *Actions* and their respective *Activities* related to Anti-corruption and Integrity work, reviewing and amending relevant legislation, training and awareness activities regarding prosecution and judiciary, training in investigative and forensic techniques, the strengthening or establishment of specialized institutions or committees, and database establishment and maintenance. In summary, **SDGs 15 and 16** cover for all *Actions* under *Objective* 1.
	**16.3**: Promote the rule of law at the national and international levels. **16.4**: By 2030, significantly reduce financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime. **16.5**: Substantially reduce corruption and bribery in all their forms. **16.6**: Develop effective, accountable and transparent institutions at all levels.	

African Elephant Action Plan Objective 2: Maintain elephant habitats and restore connectivity		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan** **Actions - Notes**
	12.2: By 2030, achieve the sustainable management and efficient use of natural resources. 12.b: Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.	SDG 12 generally covers for sound management of natural resources, whereas 12.b strongly relates to developing sustainable wildlife economies. SDG 15 covers for all Actions and their respective Activities under

	15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements. 15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally. 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species. 15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.	Objective 2, aimed at improvement and/or increasing the size of the dispersal area (habitat), which includes connectivity, land-use planning and development planning at both national and local levels.

African Elephant Action Plan Objective 3: Reduce human-elephant conflict		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan Actions - Notes**
 	**1.5**: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters. **2.3**: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment. **2.4**: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaption to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.	All *Actions* and their respective *Activities* related to HEC **mitigation**, thereby at least safeguarding food production, as well as compensation for crop loss through insurance schemes. In summary, HEC mitigation is covered under **SDGs 1 & 2**, while depending on the definitions of 'environmental shocks' and 'maintenance of ecosystems', in addition to some imagination, most of the other *Actions* under *Objective 3* may actually be covered by these **SDGs** as well, in addition to **SDGs 8 & 15**.
	**8.10:** Strengthen the capacity of domestic financial institutions to encourage and to expand access to banking, insurance and financial services for all.	

15.a: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.

African Elephant Action Plan Objective 4: Increase awareness on elephant conservation and management of key stakeholders that include policy makers and local communities among other interest groups.		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan** **Actions - Notes**
 	**4.7**: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development. **5.5**: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.	**SDG 4, Target 4.7, SDG 5, Target 5.5, SDG 12, Target 12.8 and SDG 15, Target 15.c** are especially valid in relation to developing sustainable wildlife economies and setting up community-managed conservancies, but may also cover some straightforward awareness activities related to conventional conservation of elephants.
	**12.8**: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.	
	**15.c**: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities.	

African Elephant Action Plan Objective 5: Strengthen range states knowledge on African elephants		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan** **Actions - Notes**

12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

Knowledge on Elephants primarily pertains to numbers, occupancy, and movement patterns, obtained through a sound monitoring program providing feedback to management – i.e. we need to know what is out there and what they are up to prior to any intervention (baseline), to then frequently determine what's out there following interventions. Most of the *Actions* under *Objective 5* are covered by **SDG 15**, especially **Target 15.5.**

African Elephant Action Plan Objective 6: Strengthen cooperation and understanding among range states		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan Actions - Notes**
	**15.5**: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020 protect and prevent the extinction of threatened species. **15.7**: Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products. **15.a**: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems. **15.c**: Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities. **16.3**: Promote the rule of law at the national and international levels.	All of the *Actions* and their respective *Activities* under *Objective 6* are covered by **SDGs 15 & 16,** while **SDG 17, Target 17.1** supports the development of tourism for sustainable wildlife economies.

16.4: By 2030, significantly reduce financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime.

17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection

African Elephant Action Plan Objective 7: Improve cooperation and collaboration with local communities		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan** **Actions - Notes**
	**1.4:** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance. **1.5**: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters. **1b:** Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions.	All of the *Actions* and their respective *Activities* under *Objective 7* are covered by **SDGs 1, 2, 4, 5, 6, 8, 9, 13, & 15**, including community involvement with wildlife management, setting up community-managed conservancies, skills training, legal and financial requirements, community tourism development, etc.
	**2.4**: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaption to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality. **4.7**: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including among others, through	

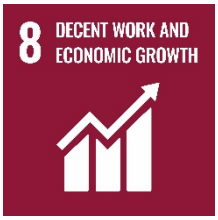
education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.

6.6: By 2020, protect and restore water-related ecosystems, including mountains forests, wetlands, rivers, aquifers and lakes.

6.b: Support and strengthen the participation of local communities in improving water and sanitation management.

8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.



8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

8.10: Strengthen the capacity of domestic financial institutions to encourage and to expand access to banking, insurance and financial services for all.

9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

15.9: By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

15a: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.

African Elephant Action Plan Objective 8: African Elephant Action Plan is effectively implemented		
Sustainable Development Goals(s)	**Relevant Target(s)**	**National Elephant Action Plan** **Actions - Notes**
	**All Targets**	**SDG 15** with most of its Targets is ultimately the key SDG that relates to all AEAP objectives.
	**16.6: Develop effective, accountable and transparent institutions at all levels.**	

Annex 2: Template for Implementation Plan

Objective 1:									
Target 1:									
Action (Target)	**Activity**	**Method** (Scope)	**Priority 1 = high 5= lowest**	**Responsibility (Implementer)**	**Verification (Progress)**	**Funding (Secured) (Required) ($US)**	**Timeframe**		
							Y1	**Y2**	**Y3**

Annex 3: Example Format for Summary Table of Objectives, Actions and Activities.

Long Term Vision:								
Goal (10 Years):								
Specific Objectives - Results To Be Achieved Within 10 Years								
	Objective 1	**Objective 2**	**Objective 3**	**Objective 4**	**Objective 5**	**Objective 6**	**Objective 7**	**Objective 8**
Theme:								
Objective:								
Actions: 1								
Activities: 1.1 1.2								

Annex 4: Example Log Frame for Actions, Activities and Indicators

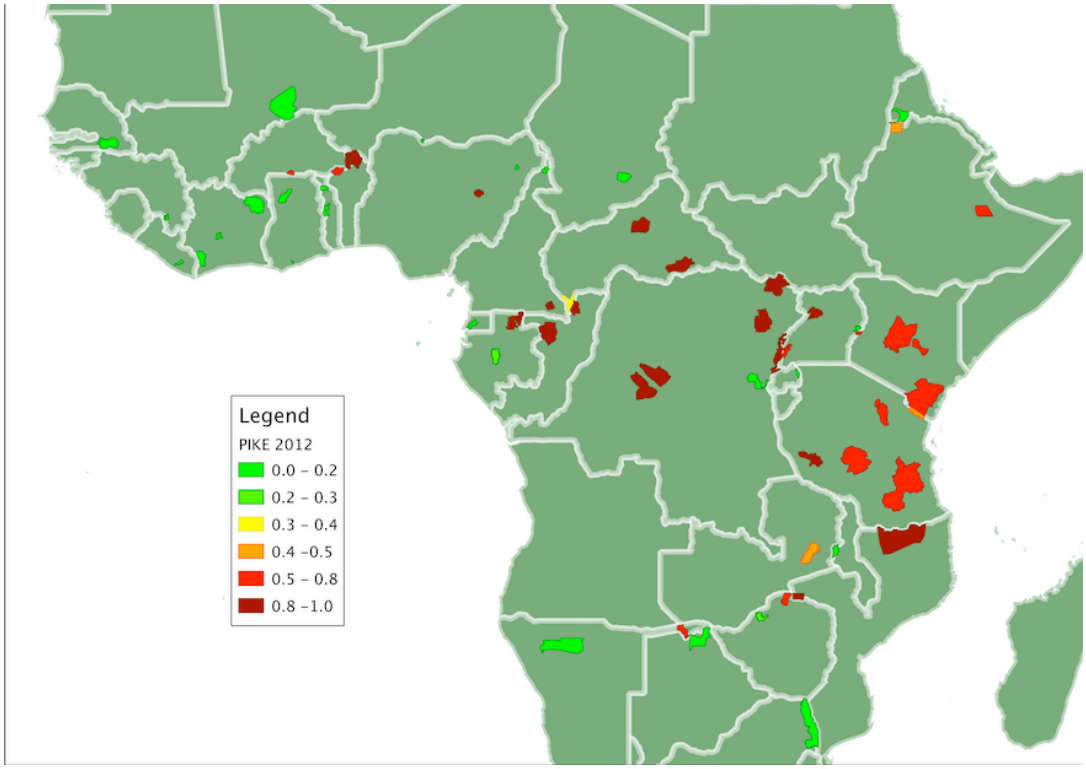
Objective	Target/desired outcome	TimeLine	Responsibility	Indicators
Objective 1				
Action	Target/desired outcome	TimeLine	Responsibility	Indicators
1.1				
Activities				
1.1				
1.2				
1.3				

Annex 5: The Proportion of Illegally Killed Elephants (PIKE)

The CITES/MIKE program evaluates relative poaching levels based on the Proportion of Illegally Killed Elephants (PIKE), which is calculated as the number of illegally killed elephants found divided by the total number of elephant carcasses encountered by patrols or other means, aggregated by year for each site. Coupled with estimates of population size and natural mortality rates, PIKE can be used to estimate numbers of elephants killed and absolute poaching rates. A rough "rule of thumb" is that PIKE rates of >0.5 (i.e. more than half the elephant carcasses found were killed illegally) may represent a population in decline (in forest areas this is difficult to assess as PIKE may be biased due to underrepresentation of elephants that died of natural causes). Data on PIKE rates for MIKE sites in Africa for 2012 are shown below.

While PIKE provides a sensitive measure of poaching trends, it may be affected by a number of potential biases related to data quality, carcass detection probabilities, and other factors, and hence results need to be interpreted with caution (Jachmann 2012). However, the fact that the PIKE analyses reported by the MIKE program seem to be in good agreement with quantitative information available from the Elephant Trade Information System (ETIS), as well as with qualitative information from the IUCN/SSC African elephant Specialist Group, gives some confidence in the robustness of the results of PIKE analyses (also see Burn *et al.* 2011).

Furthermore, the MIKE Technical Advisory Group is currently reviewing the effect of the various biases that can affect PIKE and working to resolve them. Currently, PIKE represents probably the only straightforward measure of the impact of poaching on elephant populations that can be used in both forested and more open savannah environments.



PIKE levels by MIKE site in 2012 (source: CITES 2013)

Annex 6: SMART and best practices for law enforcement monitoring

Building on the foundations laid by the Management Information System (MIST) approach to law enforcement monitoring (see http://www.ecostats.com/software/mist/mist.htm), the Spatial Monitoring and Reporting Tool (SMART) has been developed in response to the recognition that traditional tools, technologies, and resources are not stemming the illegal killing and trading of endangered species and the resulting loss of threatened and highly valued biodiversity, such as tigers, rhinos, elephants, great apes, and their habitats. There are a number of reasons why the conservation community's best efforts to date have yet to meet this challenge. A critical issue is the growing gap between the sophistication of those involved in the illegal capture and trade in wildlife and the number, skill levels, and motivation of the personnel committed to enforcing anti-poaching laws. SMART was designed to help bridge this gap. Its combination of software and training materials provides protected area authorities and community groups with the ability to empower staff, boost motivation, increase efficiency, and promote credible and transparent monitoring of the effectiveness of anti-poaching efforts. SMART can help improve ranger-based patrolling and law enforcement monitoring because it is more adaptive and intuitive to use than other monitoring technologies now in use, and because it has more advanced analytical and reporting functions. However, SMART by itself cannot solve the problems faced by elephants and myriads of other species. Effective champions for wildlife conservation and good, inspiring leadership are the most important requirements to conserve and manage elephants and other species.

Developed by global conservation organizations (including FZS, WCS, WWF, and ZSL) in close collaboration with protected area authorities, CITES, and other key stakeholders, SMART represents a major step forward for improved site-based conservation (see www.smartconservationsoftware.org). The SMART software and training materials both extend and simplify existing technologies for monitoring efforts to tackle poaching and other illegal activities, making those technologies more effective, efficient, and user-friendly.

The SMART Partnership describes the specific advantages of the SMART:

- SMART provides timely and accurate information on where, how, and by whom poaching, illegal logging, and other direct threats to biodiversity are occurring. It allows for the collection of up-to-date field and intelligence data, and enables rapid feedback and communication between protected area managers and frontline enforcement staff. It quantitatively measures the impact of anti-poaching efforts in order to judge which tactics yield the best results and which ones need to be modified, thereby greatly improving the evaluation and strategic planning of enforcement operations.
- SMART introduces accountability into anti-poaching efforts. It gives government agencies, managers, and donors the ability to monitor and assess the cost-effectiveness of law enforcement efforts. Park and community reserve managers can use it as a tool to measure job performance and help motivate field staff.
- SMART is driven by the conservation community, building on existing field-based experience and expertise and ensuring that SMART responds directly to the needs of field managers.
- SMART is open-source, non-proprietary, and free to obtain. It is supported by a long-term business plan, which will enable future development and modification to meet the evolving needs of field-based users. It is easy to use and can be translated strategic feedback and input reporting into the languages of its end users.
- SMART is fully compatible with existing and complementary tools such as CyberTracker and MIST, and has been created for integration with mobile data-gathering platforms.

Annex 7: Examples of indicators for NEAP implementation (Source: EPI, 2019)

Example indicators for AEAP Objective 1a.

Objective 1a: Reduce illegal killing of elephants (conventional)		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
1a.1 Number of patrol staff trained (per site or per range State)	Output (Simple)	Training may involve conventional law-enforcement skills, investigation techniques or simply SOPs.
1a.2 Number of patrol staff fully equipped (per site or per range State)	Output (Simple)	Provision of all basic equipment to do their job. This might include: uniform, boots, rucksack, tent, binoculars, GPS, firearm, etc.
1a.3 Patrol staff density (Number of effective patrol staff per km² per site or per range State, not involving administrative staff, management and staff on other duties)	Output (Simple, but ideally requires baseline)	Simple measure of potential law-enforcement effort that may be combined with other effort metrics, to examine to what extent this potential effort is being deployed
1a.4 Patrol frequency (Number of patrols per km² of site or range State per year)	Output (Simple)	Simple measure of effort showing the number of patrols deployed per unit area, per unit time.
1a.5 Number of effective patrol days per staff per month (*see Note 1 below*) (Per site or per range State, as monthly or annual average)	Output (Moderately complex but important performance indicator, and ideally requires baseline)	This measure provides an indication of staff morale as well as leadership qualities of senior staff. Not including placement, time spent sleeping on overnight patrols or other duties, this should be a minimum of 15 effective patrol days per month (*see Note 1*).
1a.6 Patrol Density (Number of patrol km per km² of site per unit time) (*see Note 2 below*) (Per site or per range State, as monthly or annual average)	Output (Moderately complex but important performance indicator, and ideally requires baseline)	This measure provides an indication of the surface area covered by patrols, which should ideally be used together with a map depicting patrol routes (spatial analysis).
1a.7 Habitat corrected proportion patrolled (Area (km²) patrolled) (*see Note 2 below*) (Per site or per range State, as monthly or annual average)	Output (Moderately complex but important performance indicator, and ideally requires baseline)	From the above it is clear that 1,000 patrol km in a forest site of 1,000 km² does not represent the same search effort as 1,000 patrol km in similar sized woodland savannah or open grassland sites. To correct for this and to obtain an estimate of the true area searched, the

		distance patrolled needs to be multiplied by the estimated mean strip width for that particular habitat (see Note 2).
1a.8 Ratio of effective investigation days to effective patrol days (effective investigation days per year/effective patrol days per year) (Per site or per range State, as monthly or annual average)	Output (Moderately complex)	Investigations, when properly conducted, are more effective and efficient than conventional patrols. Investigations, however, require an informant's network, careful planning and ample expertise. Assuming that an adequate operational budget is available, the ratio would among others inform us about the seriousness with which site management is pursuing illegal activity.
1a.9 PIKE for key sites (Per site)	Outcome (Moderately complex but important indicator)	Trend in Proportion of Illegally Killed Elephants (PIKE) = Carcasses found of elephants killed illegally/all elephant carcasses found by site.
1a.10 PIKE for national population (Per range State)	Outcome (Moderately complex but important indicator)	Trend in Proportion of Illegally Killed Elephants (PIKE) = Carcasses found of elephants killed illegally/all elephant carcasses found by range State.
1a.11 Elephant numbers or densities for key sites or for national populations	Outcome (Moderately complex but important indicator)	Trend in elephant numbers obtained from regular surveys using the same methodology and spatial coverage (CITES/MIKE Survey Standards).
1a.12 Ratio of arrests during investigations to arrests on patrol (# arrests on investigations/# arrests on patrol; per year per site/region or range State)	Outcome (Moderately complex but important indicator)	Useful metric that informs us about the seriousness of management to tackle wildlife crime and the success rate of investigations in relation to conventional patrols, while sites and regions may be compared without analytical difficulties.
1a.13 Number of arrests per elephant found killed illegally per unit time (# arrests (patrols + investigations)/# elephants found killed illegally per year)	Outcome (Moderately complex but important indicator)	This outcome metric does not include a measure of effort and therefore avoids analytical difficulties in relation to the detection/deterrence curve.

Note 1: Measure of effort (Indicator 1a.5) uses effective patrol days. We need to define what we mean by an effective patrol day. In some sites patrols last for a few hours and are booked as a patrol day, whereas in other sites 12 hours of patrolling is booked as a patrol day. Furthermore, some sites distinguish between short and long patrols, where small sites tend to book a couple of hours as a short patrol and a full day as a long patrol, whereas long patrols in large sites may last for several days up to a week. Moreover, if we use

effective patrol days, placement time and time spent sleeping on overnight patrols should not be included. To ensure we are able to compare data across sites and timespans within a country we need some form of standardization across all sites. The duration of a patrol needs to be measured in hours, with 8 hours of actively searching for illegal activity, which includes elephant carcasses, being an effective patrol day. Thus, a 4-hour patrol is 4/8 = 0.5 patrol day (Jachmann, 2008a&b, 2011). To simplify the measure, we can assume that the average patrol size is between 4 and 5 staff. Depending on habitat type, and types and seriousness of illegal activity, the relationship between patrol group size and detection follows an optimum curve i.e. illegal activity detection rates increase with patrol group size up to peak detection and then decrease with increasing group size. Under the majority of conditions, however, a patrol group size of between 4 and 5 relates to peak detection (Jachmann 1998) i.e. is the most effective patrol group size to achieve the maximum detection rate.

Note 2: (Referring to Indicators 1a.6 & 1a.7): During a pilot study to validate PIKE-based inferences at the site level (Jachmann 2012), the mean strip width searched on patrol in relation to the detection of elephant carcasses was estimated for open grasslands with scattered trees (Queen Elizabeth and Murchison Falls National Parks, Uganda), Guinea woodland savannah (Mole National Park, Ghana), and a mosaic of primary and secondary forest (Kakum Conservation Area, Ghana). Although the sample only comprises 4 sites, they are nevertheless representative of the main elephant habitats found on the African continent. The mean strip width for open grassland was 244 m, for woodland savannah 74 m, and for forest 35 m. Strip widths were corrected for lower visibility during the wet season (Jachmann 2012). By multiplying the total distance covered on patrol per unit time by the mean strip width for that particular habitat, and assuming there is no duplication of patrol routes, the total area covered by patrols can be estimated. For sites that lack GPS units and computerized monitoring systems, but record patrol information on data forms, using an average walking speed of 5 km/hour, a standardized effective patrol day of 8 hours may be converted to a patrol distance of roughly 40 km. However, because patrol staff may regularly stop to inspect sites with suspected illegal activity, or may deviate from their route in pursuit of perpetrators, converting time spent walking to distance covered merely provides a rough indication of patrol route distance. In the absence of GPS, a better method is immediately following a patrol have the staff draw the route on a grid map. Distance covered can then be estimated from the map.

When comparing effort data for different habitat types, in terms of detection probability – that is area searched for carcasses or illegal activity – and deterrence (part of detection/deterrence curve where detection gradually declines due to increased deterrence), they need to be corrected for visibility profile (strip width). When comparing the 3 main habitat types (habitat type here is defined as the most dominant habitat type in the site), using the mean strip widths from the pilot study (see above; 35, 74 and 244 m) effort data for the forest need to be divided by factor 7 and for woodland savannah by factor 2. When comparing forest with woodland savannah, the effort data for the forest need to be divided by factor 2. Thus, for a similar detection probability, patrol effort in the forest needs to be 7 times higher than in open grassland, and 2 times higher than in woodland savannah.

Example indicators for AEAP Objective 1b.

Objective 1b: Reduce trafficking in ivory (pro-active)		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
1b.1 Number (or %) of law enforcement officers trained in intelligence and investigations techniques (per year)	Output (Simple)	Pro-active law enforcement (i.e. intel driven) is per unit investment more effective than conventional patrols.
1b.2 Number (or %) of judiciary and prosecutors trained in dealing with serious wildlife crime (per year)	Output (Simple)	To optimally use existing wildlife laws and follow sentencing guidelines.

1b.3 Number of ivory seizures (# Seizures per year)	Outcome (Simple, needs baseline)	All ivory seizures (see ETIS criteria).
1b.4 Ratio of arrests to prosecutions Independent of type of law-enforcement effort, the numbers of wildlife offenders arrested/numbers prosecuted per year	Outcome (Simple, needs baseline)	Useful metric, because it informs us whether the police force and the prosecutor's office consider wildlife crime to be a serious offence, whether corruption is involved and how serious the wildlife authorities are in pursuing conviction of perpetrators.
1b.5 Ratio of prosecutions to convictions Number of wildlife offenders prosecuted/number of wildlife offenders convicted per year	Outcome (Simple, needs baseline)	Another useful metric, because it informs us whether prosecutors and judges consider wildlife crime to be a serious offence and treat it accordingly.
1b.6 Rate of maximum penalty application Number of maximum penalty applications/total penalty applications per year Or use number of sentences following judicial guidance/sentencing guidelines. I.e. maximum sentences are not always appropriate, so failure to give the maximum custodial sentence is not a failure if a high fine/appropriate custodial sentence was given?	Outcome (Simple, needs baseline)	This measure informs us about the judiciary, whether they consider wildlife crime a serious offence.

Note: For a comprehensive analysis of means and measures available to protect wildlife at the national level, use the UNODC Toolkit (UNODC 2013). For a comprehensive self-assessment framework consult ICCWC (2016).

Example indicators for AEAP Objective 2.

Objective 2: Maintain elephant habitats and restore connectivity		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
2.1 Number of elephants currently equipped with an active radio collar	Output (Simple, needs baseline)	Collaring of elephants to study movements to determine the locations and extent of corridors, or for protection purposes.
2.2 Number of habitat corridors created	Output (Simple)	Connectivity is a measure of investment in ensuring elephants can access maximum suitable habitat.
2.3 Surface area (km²) of new elephant habitat created through newly	Outcome	Related to connectivity, creating large dispersal areas for the

designated protected areas, buffer zones and corridors	(Simple, where baseline should be readily available)	long-term conservation of viable populations.
2.4 Proportion of elephant range being part of the protected area estate	Outcome (Simple)	Similar to previous one.

Example indicators for AEAP Objective 3.

Objective 3: Reduce Human-Elephant Conflict (HEC)		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
3.1 Length of elephant-proof fence erected (km) (km per year per range State)	Output (Simple, needs baseline)	NA
3.2 Length of elephant-proof trenches dug (km per year per range State)	Output (Simple, needs baseline)	NA
3.3 Number of community members trained in HEC mitigation methods # people trained per year per site or in range State	Output (Simple, needs baseline)	NA
3.4 Number of field officers trained in conflict management # officers trained per year per site or in range state	Output (Simple, needs baseline)	NA
3.5 Number of HEC incidents reported # HEC incidents per year per range State	Outcome (Simple)	Trend in HEC incidents. This assumes a fixed number of locations from where HEC incidents are reported, covering the same area.
3.6 Trend in number of human fatalities # Human fatalities per year per range State	Outcome (Simple)	This assumes a fixed number of locations from where human fatalities are reported, covering the same area, unless this indicator is used for a particular site.
Surface area of crops damaged km² of crops damaged per year per site or range State	Outcome (Simple)	Trend in surface area of crops damaged per site or per range State. When used for the entire country, this assumes a fixed number of locations from where crop damage is reported, covering the same area

Example indicators for AEAP Objective 4.

Objective 4: Increase awareness on elephant conservation of key stakeholders		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
4.1 Awareness raising tools created	Output (Simple)	Tools may be regular workshops, meetings, flyers,

		brochures, booklets, media broadcasting (radio, TV, internet, social media), course material, etc.
4.2 Number of people addressed per target group Number of people per target group per year per range State	Output (Simple)	Target groups may be elementary school children, high school students, college and university students, general public, communities, community elders, different business groups, extractive industry staff, judiciary, prosecutors, enforcement community, etc.
4.3 % of population reached % of population (all target groups combined) reached by awareness raising tools	Output (Simple)	NA
4.4 **% of population supportive of elephant conservation** % per year (national)	Outcome (Moderately complex)	% of all target groups combined (survey sampling method should be representative of all target groups by proportion of population).

Example indicators for AEAP Objective 5.

Objective 5: Strengthen knowledge on elephant management		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
5.1 Number of sites and open areas surveyed using CITES/MIKE survey standards Alternatively, % of PA system or % of elephant range surveyed	Output (Simple)	Surveys designed to provide results on elephant numbers, distribution and movements, but using a standardized design.
5.2 Number of research projects underway	Output (Simple)	Only research to guide adaptive management should be included.
5.3 Number of elephants equipped with radio collars	Output (Simple)	See indicator 2.1

Example indicators for AEAP Objective 6.

Objective 6: Strengthen cooperation with other range states		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
6.1 Number of official collaboration protocols (MoUs) signed with bordering countries For elephant management, or law enforcement, mutual legal assistance etc. Maximum is number of bordering countries	Output (Simple)	For some countries on the coast this may be as few as 3, but more for land-locked countries.
6.2 Number of joint cross-border patrols	Output	NA

# joint patrols per year for a particular cross-border region or trans-boundary conservation area	(Simple)	
6.3 Number of joint border controls # joint border controls per year	Output (Simple)	Controls of vehicles at border crossings.
6.4 Number of joint investigations # joint investigations per year	Output (Simple)	NA
6.5 Number of arrests per joint operation Mean number of arrests of all joint operations combined per year	Outcome (Simple)	Mean number of arrests from all joint operations combined.
6.6 Number of seizures per joint operation or weight Mean number of seizures of all joint operations combined per year	Outcome (Simple)	Mean number of seizures or mean weight of seized ivory from all joint operations combined.

Example indicators for AEAP Objective 7.

Objective 7: Improve collaboration with local communities		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
7.1 Number of Protected Area Advisory Boards established, or number of Village Natural Resource Committees actively engaged with Park Management, or tourism generated funds from PAs paid to VNRCs	Output (Simple)	Community members are important stakeholders on the board.
7.2 Number of community conservancies established	Output (Simple)	Wildlife areas outside the PA system managed by communities.
7.3 Number of community-based eco-tourism enterprises established	Output (Simple)	Cultural and nature-based activities managed by PA fringe communities.
7.4 Number of community members trained in enterprise management	Output (Simple)	Setting up and managing an enterprise.
7.5 Amount of tourism revenue generated by community enterprises Revenue generated per year, national level	Output (Simple)	NA
7.6 Number of elephants killed by community members # killed per year	Outcome (Simple)	Elephants killed in the vicinity of the community, either for economic gain or due to HEC.
7.7 Number of snares collected # snares collected per year per site	Outcome (Simple, needs baseline)	Snaring is usually done for bush-meat by members of fringe communities.

Example indicators for AEAP Objective 8.

Objective 8: NEAP effectively implemented		
Indicator/(Units)	**Type/(Complexity)**	**Explanation**
8.1 Number of review meetings held	Output (Simple)	Meetings with all stakeholders dealing with implementation of the NEAP.
8.2 Number of MoUs with government stakeholders	Output (Simple)	Government institutions that have roles and responsibilities in relation to NEAP objectives and actions.
8.3 Number of MoUs with Non-governmental stakeholders / number of non-government stakeholders contributing to annual review document	Output (Simple)	Stakeholders that are important for implementation and funding.
8.4 % of NEAP implemented % implemented per year	Outcome	

Annex 8: Counting Elephants

Why count elephants? The need for scientific monitoring of elephant populations arises from several broad considerations. Information about elephant distribution and abundance and the trends in these parameters is needed to:

- set appropriate management goals;
- to monitor the effectiveness of management interventions and policy-makers' decisions (e.g. whether ivory can be traded legally);
- to assess the impact of threats such as habitat loss and degradation; and
- to inform local people and other stakeholders (Lindsay 1993; Jachmann 2001; Blanc *et al*. 2003; Sutherland *et al*. 2004; Hedges 2012).

Given the threatened status of many elephant populations, and the substantial investments being made in elephant conservation, wildlife managers and conservation agencies need clear and reliable answers to some basic questions. Without these answers, they cannot begin to evaluate the success or failure of conservation efforts. Some of these basic questions are:

1. What are the geographic range and distribution of elephant populations?
2. Where are individual elephant populations increasing their range, and, where are these ranges fragmenting or shrinking?
3. For important elephant populations, what are the population trends? In other words, are these important elephant populations stable, declining, or increasing?
4. What are the threats to elephants and their habitat in a site or landscape and how effective are law enforcement and other management interventions at reducing those threats?

The traditional approaches to answering these questions have too often been based on:

a. Encounter rates for elephant sign and/or reliance on untested assumptions about sign (dung) production and persistence [see Buckland *et al*. (2001: 186-189; 2004: 377-385) and Laing *et al.* (2003)]; or
b. imprecise aerial surveys that do not always pay attention to detectability and thus return population estimates of questionable accuracy and of limited utility for monitoring population

trends (Caughley 1974; Jachmann 2001; Whitehouse *et al*. 2001; Jachmann 2002; Msoffe et al. 2009); or

c. in Asia at least, 'total direct counts' (censuses), counts at waterholes, and 'block counts' [see, e.g., Bist (2003) for descriptions of these methods] all of which fail to address the critical issues of detectability and spatial sampling, and consequently the relationship between the count statistic and the true number of elephants is not known for those sites where these methods were used (Williams *et al*. 2002; Elphick 2008).

Use of erroneous data on elephant distribution and abundance can – and does – result in erroneous conclusions about elephant population status and trend, leading to the misdirection of funds and overlooked conservation opportunities (Duckworth & Hedges 1998; Blake & Hedges 2004; Hedges 2006). Fortunately, during the past three decades, there has been phenomenal progress in the methods used for wildlife population estimation. This progress is evidenced by the development and deployment of both new statistical models and new technologies (Burnham 2004). Three important conceptual approaches to population sampling – distance sampling, capture–recapture sampling, and occupancy sampling (which is related to capture–recapture sampling) – have all advanced particularly rapidly (Buckland *et al*. 2001; Williams *et al*. 2002; Buckland *et al*. 2004; MacKenzie *et al.* 2006; Bohning 2008). In addition, hierarchical modelling methods have received a lot of attention and now provide a powerful framework for the analysis of data from capture–recapture and other sampling of populations, metapopulations, and communities (Royle & Dorazio 2008; Link & Barker 2010).

It is now recognized that the methods used for monitoring elephant populations can and should incorporate recent scientific advances. As an example of such recognition, the CITES Monitoring the Illegal Killing of Elephants (MIKE) program has produced new guidelines and standards in attempt to improve the traditional monitoring protocols for elephants (Craig 2004; Hedges & Lawson 2006). However, neither of these manuals covers all the methods available to those needing to monitor elephant populations. Moreover, there have been significant advances in the last 5–10 years. Fortunately, there are several excellent general books that deal with these matters (e.g., Jachmann 200; Buckland *et al*. 2001; Williams *et al*. 2002; Buckland *et al*. 2004; Amstrup *et al.* 2006; MacKenzie *et al*. 2006; Milner-Gulland & Rowcliffe 2007; Conroy & Carroll 2009) and a new comprehensive manual that describes how to use these methods to monitor elephant populations (Hedges 2012). The methods available to monitor elephants covered in Hedges (2012) are summarized below and vary according to the spatial scale at which one needs to work, the nature of the elephants' habitat, and the likely size of the elephant populations of interest.

8.1. Population monitoring methods

Deciding which methods to use depending on what you need to know (reproduced with permission from Hedges 2012)

What do you need to know?	Which method(s) to use	
	Site (≤ 5000 km²)	Landscape (> 5000 km²)
Elephant occurrence, range, and distribution (occupancy)	Detection–non-detection survey, repeated to assess trend (Chapters 6 & 11).	Detection–non-detection survey, repeated to assess trend (Chapters 6 & 11).
Determinants (including habitat type/quality) of elephant occurrence, range, and distribution	Occupancy surveys using elephant dung to assess detection–non-detection of elephants and covariate modelling to evaluate hypotheses for occupancy in relation to both human activity and ecological features (Chapters 6 & 11).	Occupancy surveys using elephant dung to assess detection–non-detection of elephants and covariate modelling to evaluate hypotheses for occupancy in relation to both human activity and ecological features (Chapters 6 & 11).

Elephant population density and abundance, and trends in density and abundance	Terrestrial sightings surveys using line transects, give density, which can be converted to abundance; repeated over time to assess trends (Chapters 3 & 7). Aerial surveys, repeated over time to assess trends (Chapter 8). Capture–recapture surveys (give abundance, which can be converted to density) using faecal DNA or, in a few places, sightings or camera/video traps; repeated over time to assess trends (Chapters 5 & 10). Dung count surveys using line transects to estimate dung density plus dung decay rate estimation plus defecation rate estimation (or use of appropriate data defecation rate from another study); give density, which can be converted to abundance; repeated over time to assess trends (Chapters 3, 4, & 9).	For non-concealing habitat types, aerial surveys, repeated over time to assess trends (Chapter 8). For very large areas of concealing habitat types such as forests (> c. 25,000km²), use two-phase sampling and modelling in a Bayesian framework. In the first phase, occupancy is estimated by surveys to detect elephant sign (e.g. dung piles) in all selected sites in the landscape, where selection may be of all sites available, or a random sample of sites. In the second phase, if a detection threshold is achieved, capture–recapture sampling is conducted to estimate abundance. Detection and capture–recapture data are then used in a joint likelihood to model probability of detection in the occupancy sample via an abundance–detection model. Capture–recapture modelling is used to estimate abundance for the abundance–detection relationship, which is used to predict abundance at the remaining sites, where only detection data were collected. Repeated over time to assess trends (Chapters 6, 11, & Coda). For intermediate sized areas (> 5000km²) and very large areas (> c. 25,000km²) of concealing habitat types (e.g. forest), experiment with marked sign (dung pile) counts and two visits per transect so as to remove the need for pre-survey dung decay monitoring and, if this method is successful use the effort and money saved to facilitate a multi-scale stratified survey across the landscape. Selected sites of significant elephant abundance and/or those that are also important for management, e.g. protected areas or MIKE sites, can be more intensively surveyed and treated as separate strata in the analysis. Repeated over time to assess trends (Chapter 4). For intermediate sized areas (5000km² to a maximum yet to determined) of concealing habitat types (e.g. forest), consider experimenting with dung counts and rainfall models of the dung decay

		process. Repeated over time to assess trends (Chapters 3, 4, 9, & Coda).
Demographic parameters: survival rates, emigration rates, movement or transition rates, fecundity, population growth rates	Capture–recapture surveys using fecal DNA or, in a few places, sightings or camera/video traps; repeated over time to assess trends (Chapters 5 & 10).	Abundance-occupancy relationships from distributional surveys, to understand and document large-scale population dynamics and the consequences of environmental change (Chapters 6 & 11).
Abundance and distribution of threats	Patrol-based data collection; dedicated survey based data collection in conjunction with, e.g., transect-based surveys for elephant sign (Chapter 12).	Patrol-based data collection; dedicated survey based data collection in conjunction with, e.g., occupancy surveys for elephant sign (Chapter 12).

Summary of key requirements, advantages, and disadvantages of the recommended population survey and monitoring methods (reproduced with permission from Hedges 2012)

Method	Requirements	Key advantages	Key disadvantages
Occupancy (detection–non-detection) surveys for elephant sign (Chapters 6 & 11)	• Independent repeat surveys can be conducted at sites, which can be grid cells or some other defined sampling unit, ideally over a short period of time	• Can be used when elephants cannot be seen readily (because they occur in concealing vegetation types such as rainforest)	• Choice of survey site (e.g. grid cell) size needs to be guided by knowledge of likely home range size in order to distinguish true occupancy from use, but home range sizes for elephants – especially forest elephants – are not well known
Terrestrial sightings surveys using line transects (Chapters 3 & 7)	• Elephants can be seen readily (because they occur in non-concealing vegetation types) • Elephants do not move away (or towards) the observers in response to the observers' movements before the observers have detected the elephants	• Can be a cost-effective method to estimate density/abundance for medium to large populations • Can provide data on population sex- and age -structure	• Difficult if terrain hinders following a straight line • Not cost effective if population size is very small (a few 10s of elephants) as effort required to achieve tolerable precision will be too high
Aerial surveys (Chapters 3 & 8)	• Elephants can be seen readily (because they occur in non-concealing vegetation types)	• Allows relatively quick/efficient coverage of large areas • Can provide data on population sex- and age-structure • Can provide data on abundance and distribution of elephant carcasses (and carcass: live animal ratios)	• Access to a suitable airplane and appropriately qualified pilot/observers maybe an issue • Can be expensive • Can return imprecise estimates if elephant encounter rates are low • Tends to produce underestimates of elephant abundance due to imperfect detection on the transect line (distance sampling) or in the sampling unit (strip transects).
Capture–recapture surveys using faecal DNA (Chapters 5 & 10)	• Total elephant population size is likely to be less than a few thousand animals (above this size a very large number of samples would have to be	• Provides detailed data for each animal 'captured' (can be particularly helpful in situations where illegal killing is biased towards, e.g. adult	• Access to a suitable laboratory and appropriately qualified staff maybe an issue (there are currently relatively few laboratories set-up for faecal

	collected and analysed making the cost prohibitive)	males) and, depending on study design, allows estimates of survival rates, emigration rates, movement or transition rates, fecundity, and population growth rates (so, more informative than dung counts) • Can be used when population size is too small (a few 10s of elephants) for terrestrial sighting-based surveys using line transects to be cost effective • Can be used when elephants cannot be seen readily (because they occur in concealing vegetation types such as rainforest) • Can be used when it is not possible to estimate dung disappearance (decay) rates for the site • Can be used when no appropriate defecation rate data are available • Should return a more precise estimate of population size than dung count based methods • Less time-consuming than dung count based methods (because no pre-survey dung decay estimation required) • Cost is likely to be lower than dung count based methods	DNA analysis and very few in elephant range States so the need to export samples may also be a problem) • Fresh elephant dung maybe difficult to find in some areas (but use of detection dogs may be helpful)
Capture–recapture surveys using direct sightings or camera/video traps (Chapters 5 & 10)	• A good 'network' of clearings, waterholes, etc. exists at which sightings can be obtained or camera traps can be positioned so as to	• Provides detailed data for each animal 'captured' (can be particularly helpful in situations where illegal killing is biased towards, e.g., adult males) and, depending on study	• Effort to precision ratio typically high compared to terrestrial sighting-based surveys using line transects and so capture–recapture field costs are typically higher

	obtain reliably whole-body photographs of elephants	design, allows estimates of survival rates, emigration rates, movement or transition rates, fecundity, and population growth rates (so, more informative than dung counts along line transects) • Can be used when population size is too small (a few 10s of elephants) for terrestrial sighting-based surveys using line transects to be cost effective • Can be used when elephants cannot be seen readily during aerial surveys or along terrestrial sighting transects (and/or move away in response to observers before they are detected) • Can be used when it is not possible to estimate dung disappearance (decay) rates for the site • Can be used when no appropriate defecation rate data are available • Should return a more precise estimate of population size than dung count based methods • Less time-consuming than dung count based methods • Cost may be lower than dung count based methods	• Few places are suitable: in most forested areas obtaining whole-body shots of elephants with sufficient frequency will be impossible; in more open areas direct sighting based methods (terrestrial or aerial surveys) are likely to be more appropriate • Camera traps are expensive, subject to problems with humidity, and liable to be stolen in some areas
Dung count surveys using line transects (Chapters 3, 4, & 9)	• Ideally, dung pile encounter rates along transects should be >1/km • Dung disappearance (decay rates) can be estimated in a spatially unbiased manner for the whole site	• Can be used when elephants cannot be seen readily (because they occur in concealing vegetation types such as rainforest)	• Time-consuming, particularly because of the need to begin dung decay rate monitoring many months before the survey • Obtaining spatially unbiased dung disappearance rates for the whole

	over the period leading up to and including the dung count survey • Appropriate defecation rate data are available	• Can also provide data on population age-structure if dung dimensions are recorded • Can return more precise estimates than aerial or terrestrial sighting-based surveys aerial surveys because the sighting-based surveys record the instantaneous distribution of elephants, and the variation between transects is usually high, often giving estimates with wide confidence limits	site can be prohibitively difficult (because it requires very high effort levels) • Estimating dung density is problematic if significant areas of the site are seasonally (or permanently) inundated • Difficult if terrain hinders following a straight line • Labour-intensive and thus also likely to be expensive

List of Boxes

Glossary

Actions. The interventions (activities that are part of this action) which need to be implemented to achieve the NEAP's targets and, ultimately, its objectives, goal, and vision.

Adaptive management. Adaptive management incorporates research into conservation action. Specifically, it is the integration of design, management, and monitoring to systematically test assumptions in order to adapt and learn (Salafsky et al. 2001).

African Elephant Action Plan. The African Elephant Action Plan was adopted by all the African elephant range States in March 2010 at the 15th Conference of the Parties to CITES. The plan was developed through a consultative process, facilitated by IUCN and the CITES Secretariat, and is available at https://cites.org/common/cop/15/inf/E15i-68.pdf. An African Elephant Fund and an African Elephant Fund Steering Committee were subsequently established but funding levels remain inadequate to address the problems faced by Africa's elephants.

Constraint. Factors which contribute to or compound the threats. For example, lack of political will and resources might contribute to a lack of law enforcement, leading in turn to over-exploitation.

Ecologically functional populations. Ecologically functional populations are populations that are of sufficient size to fulfil their ecological roles.

Elephant Trade Information System (ETIS). ETIS 'is a comprehensive information system to track illegal trade in ivory and other elephant products. It shares the same objectives as those set out for MIKE in [CITES] Resolution Conf. 10.10 (Rev. CoP12), with the difference that its aim is to record and analyse levels and trends in illegal trade, rather than the illegal killing of elephants. The central component of ETIS is a database on seizures of elephant specimens that have occurred anywhere in the world since 1989. The seizure database is supported by a series of subsidiary database components that assess law enforcement effort and efficiency, rates of reporting, domestic ivory markets and background economic variables. These database components are time-based and country-specific and are used to mitigate factors that cause bias in the data and might otherwise distort the analytical results. The subsidiary database components also assist in interpreting and understanding the results of the ETIS analyses. Since its inception, ETIS has been managed by TRAFFIC on behalf of the CITES Parties and is currently housed at the TRAFFIC East/Southern Africa office in Harare, Zimbabwe' (from http://www.cites.org/eng/prog/etis/index.shtml).

Elephant Protection Initiative (EPI). The EPI is an initiative launched at the February 2014 London Conference on the Illegal Wildlife Trade by the governments of Botswana, Chad, Ethiopia, Gabon, and Tanzania. Since then, sixteen more countries have joined the EP.

EPI States. Member States which have made a Presidential signed pledge of commitment to the EPI.

EPI Partners. Non-state parties which have signed a pledge of commitment to the EPI. To date there are 31 NGOs, INGOs, EPI Partners and numerous more private sector, CSOs, etc EPI Partners.

Goal. A rephrasing of the vision in operational terms to capture in greater detail what needs to be done, and where (to save the species).

Human-elephant conflict (HEC). Crop depredations, damage to equipment and other property caused by elephants, other forms of economic losses incurred as a result of elephant activity (e.g. opportunity costs), and the injuries to or deaths of people and elephants that result from these phenomena.

International Consortium on Combating Wildlife Crime (ICCWC). ICCWC is a collaborative effort of five inter-governmental organizations "working to bring coordinated support to the national wildlife law enforcement agencies and to the sub-regional and regional networks that, on a daily basis, act in defence of natural resources". The ICCWC partners are the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Secretariat, INTERPOL, the United Nations Office on Drugs and Crime, the World Bank, and the World Customs Organization. The mission of ICCWC is "to usher in a new era where perpetrators of serious wildlife and forest crime will face a formidable and coordinated response, rather than the present situation where the risk of detection and punishment is all too low". Further information on ICCWC is available at http://www.cites.org/eng/prog/ICCWC.php.

ICCWC Indicator Framework for Combating Wildlife and Forest Crime (ICCWC Indicator Framework). The ICCWC Indicator Framework has been developed to work alongside the ICCWC Toolkit (see below) and provide an additional assessment tool for use at a national level. While the ICCWC Toolkit provides the means for a comprehensive analysis, the ICCWC Indicator Framework allows for a more rapid assessment of a national law enforcement response to wildlife crime. It also provides a standardized framework to monitor any changes in national law enforcement capacity and effectiveness over time. The ICCWC Indicator Framework is a comprehensive set of 50 indicators arranged against eight desired outcomes of effective law enforcement to combat wildlife crime. It is in the form of a self-assessment framework, which is best completed through a collaborative process involving all relevant national law enforcement agencies. The ICCWC Indicator Framework is available at https://cites.org/sites/default/files/eng/prog/iccwc/ICCWC-Ind-FW-ASSESSMENT-GUIDELINES-FINAL.pdf.

ICCWC Wildlife and Forest Crime Analytic Toolkit (ICCWC Toolkit). The ICCWC Toolkit provides a technical resource for countries to complete a national assessment of the main issues related to wildlife crime in the country. The ICCWC Toolkit helps analyze national preventive and criminal justice responses to wildlife crime and identify technical assistance needs. Further information about the ICCWC Toolkit, including the Toolkit in English, French and Spanish, is available at: https://www.cites.org/eng/prog/iccwc.php/Tools. A factsheet on the ICCWC Toolkit is available at: https://cites.org/sites/default/files/eng/prog/iccwc/Toolkit_Fact_Sheet_ENG.pdf.

Law Enforcement Effort Ratio (LEER). ETIS's Law Enforcement Effort Ratio (LEER) represents how effective law enforcement is in intercepting illegal trade in ivory and is the ETIS equivalent of the MIKE Program's PIKE. It is routinely calculated for each country each year by ETIS. A LEER of 50% means 'some illicit ivory trade leaves the country without being seized, but seizures regularly occur'. LEER is calculated by dividing the number of in-country seizures (i.e. 'seizures in') by the total number of seizures (i.e. 'seizures in' + 'seizures out'). Law enforcement effort ratios range from:

- 00.00-10.00 No effective law enforcement – virtually all illicit ivory trade leaves the country without being seized;
- 10.01-25.00 Very poor law enforcement – most illicit ivory trade leaves the country without being seized;
- 25.01-40.00 Poor law enforcement – most illicit ivory trade leaves the country without being seized, but seizures sometimes occur;
- 40.01-60.00 Fair law enforcement – some illicit ivory trade leaves the country without being seized, but seizures regularly occur;
- 60.01-75.00 Good law enforcement – some illicit ivory trade leaves the country without being seized, but seizures usually occur;
- 75.01-90.00 Very good law enforcement – very little illicit ivory trade leaves country;
- 90.01-100.00 Excellent law enforcement – virtually no illicit ivory trade leaves the country. See: http://www.cites.org/common/cop/15/inf/E15i-53.pdf

Management Information System (MIST). MIST is a unified database management system designed to service protected area and park management needs (see http://www.ecostats.com/software/mist/mist.htm).

Indicators. Indicators can be classified into two main types:

- "Output indicators" . Examples of output indicators include "number of patrols completed per month in priority sites" and "number of elephant population surveys completed in priority sites". Such indicators tend to be short-term in nature, are primarily useful as indicators of progress, and allow national and local government staff, NGO partners, and donors to keep track of a range States' progress in implementing a NEAP.
- "Outcome indicators". Examples of outcome indicators include "Proportion of Illegally Killed Elephants (PIKE) in key sites" and "Elephant population size or trend in key sites". Such metrics tend to be longer-term than activity metrics because they typically require more time and effort to assess; they are essential, however, because they tell national and local government staff, NGO partners, and donors whether the NEAP is being successful in conserving the range States' elephants. In addition, "scope indicators" are sometimes used to indicate the number (or proportion) of places where work is underway, while traffic-light indicators merely inform whether something has or has not taken place.

Monitoring the Illegal Killing of Elephants (MIKE). A CITES program, the overall goal of which 'is to provide information needed for elephant range States to make appropriate management and enforcement decisions, and to build institutional capacity within the range States for the long-term management of their elephant populations. More specific objectives within this goal are:

- to measure levels and trends in the illegal hunting of elephants;
- to determine changes in these trends over time; and
- to determine the factors causing or associated with such changes, and to try and assess in particular to what extent observed trends are a result of any decisions taken by the Conference of the Parties to CITES' (from http://www.cites.org/eng/prog/MIKE/intro/index.shtml).

National Ivory Action Plan (NIAP). Country-specific action plans focused on effectively controlling trade in ivory and ivory markets, with milestones, timelines, and deadlines, which named Parties to CITES have been requested to produce by CITES (see https://cites.org/eng/niaps).

SMART. When the acronym 'SMART' refers to targets, it indicates that they should be Specific, Measurable, Achievable, Realistic, and Time-bound; the acronym also means Spatial Monitoring and Reporting Tool, which is a tool developed by global conservation organizations and other stakeholders, to tackle poaching, habitat encroachment, and other illegal activities that is gradually replacing MIST (see http://www.smartconservationsoftware.org/ ; also see MIST).

Target. In our usage, targets are measurable steps that describe what needs to be accomplished to meet a goal or objective. Progress towards meeting targets is tracked using indicators and together the indicators and targets make it possible to assess whether an action or set of related actions have been successful or whether the actions are failing or underperforming.

Threat. A factor which causes either a substantial decline in the numbers of individuals of a population or species, or a substantial contraction of the population's or species' geographic range. Threats can be divided into proximate and ultimate threats. Proximate threats are immediate causes of population decline, usually acting on birth or death rates (e.g. habitat loss, over-harvest). Ultimate threats are root causes of proximate threats, and are almost always anthropogenic; e.g. habitat loss (a proximate threat) might be driven by human population growth (an ultimate threat).

Value Chain. Value Chain is the full range of business activities needed to bring a product or service from conception to delivery.

Vision. An inspirational and relatively short statement that describes the desired future state for the species (i.e. it describes in broad terms the desired range and abundance for the species, its continuing ecological role, and it relationship with humans) The vision is thus an essential part of the action planning process in that those developing a NEAP should discuss explicitly what it means to conserve ecologically functioning populations of elephants in a range State and use the answer to this question to develop the associated goal, objectives, and actions. The vision should, therefore, be derived from an analysis of the species' status and a detailed presentation of the long-term conservation needs of the species (informed by a threat analysis).

Literature Cited

- Amstrup S.C., McDonald T.L. & Manly B.F.J. (2006) Handbook of Capture–Recapture Analysis. Princeton University Press, Princeton, NJ, USA.
- Bist S.S. (2003) An overview of the methods for enumeration of wild elephants in India. Gajah 22, 67-70.
- Blake S. & Hedges S. (2004) Sinking the flagship: The case of forest elephants in Asia and Africa. Conservation Biology 18, 1191-202.
- Blanc J.J., Thouless C.R., Hart J.A., Dublin H.T., Douglas-Hamilton I., Craig C.G. & Barnes R.F.W. (2003)
- African Elephant Status Report 2002: An Update from the African Elephant Database. p. vi + 302.
- IUCN/SSC African Elephant Specialist Group, Gland, Switzerland, and Cambridge, UK.
- Bohning D. (2008) Editorial - Recent Developments in Capture-Recapture Methods and Their Applications.
- Biometrical Journal 50, 954-6.
- Buckland S.T., Andersen D.R., Burnham K.P., Laake J.L., Borchers D.L. & Thomas L. (2001) Introduction to Distance Sampling: Estimating Abundance of Biological Populations. Oxford University Press Inc., New York, USA.
- Buckland S.T., Anderson D.R., Burnham K.P., Laake J.L., Borchers D.L. & Thomas L. (2004) Advanced Distance Sampling: Estimating abundance of biological populations. Oxford University Press, Oxford, UK.
- Burn R.W., Underwood F.M. & Blanc J. (2011) Global Trends and Factors Associated with the Illegal Killing of Elephants: A Hierarchical Bayesian Analysis of Carcass Encounter Data. PLoS ONE 6, e24165.
- Burnham K.P. (2004) Foreword. In: Sampling Rare or Elusive Species: Concepts, Designs, and Techniques for Estimating Population Parameters (ed. by Thompson WL), pp. xi-xiii. Island Press, Washington, DC., USA.
- Caughley G. (1974) Bias in aerial survey. Journal of Wildlife Management 38, 921-33.
- Chami, R., Fullenkamp, C., Casimano, T. & F. Berzaghi (2020) The secret world of elephants. IMF.
- CITES, IUCN & TRAFFIC (2013) Status of African elephant populations and levels of illegal killing and the illegal trade in ivory: A report to the African Elephant Summit December 2013. Prepared by the CITES Secretariat, IUCN / SSC African Elephant Specialist Group, and TRAFFIC International. CITES Secretariat, Geneva, Switzerland (https://cmsdata.iucn.org/downloads/african_elephant_summit_background_document_2013_en.pdf)
- Conroy M.J. & Carroll J.P. (2009) Quantitative Conservation of Vertebrates. Wiley-Blackwell, Oxford, UK.
- Craig C.G. (2004) Monitoring of the Illegal Killing of Elephants: Aerial Survey Standards for the MIKE Programme. CITES MIKE Programme, Central Coordinating Unit, PO Box 68200, Nairobi, Kenya.
- Duckworth J.W. & Hedges S. (1998) Tracking Tigers: A review of the Status of Tiger, Asian Elephant, Gaur, and Banteng in Vietnam, Lao, Cambodia, and Yunnan (China), with Recommendations for Future Conservation Action. WWF Indochina Programme, Hanoi, Vietnam.

- EPI (2018) NEAP Guidance Note for National Resource Mobilization. Internal report.
- EPI/Geopolicity (2019a) Elephant Economics Botswana. EPI, London.
- EPI/Geopolicity (2019b) Sustainable Wildlife Economics. EPI, London.
- EPI (2019) Monitoring & Evaluation Framework. EPI, London.
- Elphick C.S. (2008) How you count counts: the importance of methods research in applied ecology. Journal of Applied Ecology 45, 1313-20.
- Forbes (2018) 'Blended Finance' -- Lipstick On The Public-Private Partnership Pig?
- Gupta, A. C. (2013). Elephants, safety nets and agrarian culture: understanding human-wildlife conflict and rural livelihoods around Chobe National Park, Botswana. Journal of Political Ecology, Vol. 20, 238 – 254.
- Hedges S. (2006) Conservation. In: Biology, Medicine and Surgery of Elephants (eds. by Fowler ME & Mikota SK), pp. 475-89. Blackwell Publishing.
- Hedges S. (2012) Monitoring elephants and assessing threats: a manual for researchers, managers and conservationists. Universities Press (India) Private Limited, Himayatnagar, India.
- Hedges S. & Lawson D. (2006) Dung Survey Standards for the MIKE Programme. CITES MIKE Programme, Central Coordinating Unit, PO Box 68200, Nairobi, Kenya.
- IUCN/SSC (2008a) Strategic Planning for Species Conservation: A Handbook. Version 1.0. IUCN Species Survival Commission, Gland, Switzerland (http://cmsdata.iucn.org/downloads/scshandbook_2_12_08_compressed.pdf).
- IUCN/SSC (2008b) Strategic Planning for Species Conservation: An Overview. Version 1.0. IUCN Species Survival Commission, Gland, Switzerland (http://cmsdata.iucn.org/downloads/scsoverview_1_12_2008.pdf).
- Jachmann, H. (1998). Monitoring Illegal Wildlife Use and Law Enforcement in African Savanna Rangelands. WRMU Handbook No. 1, ECZ, Lusaka, Zambia. Pp. 124.
- Jachmann H. (2001) Estimating Abundance of African Wildlife: An Aid to Adaptive Management. Kluwer Academic Publishers, Boston, MA, USA.
- Jachmann H. (2002) Comparison of aerial counts with ground counts for large African herbivores. Journal of Applied Ecology 39, 841-52.
- Jachmann, H. (2008a). Monitoring law-enforcement performance in nine protected areas in Ghana. Biological Conservation 141, 89 – 99.
- Jachmann, H. (2008b). Illegal wildlife use and protected area management in Ghana. Biological Conservation 141, 1906 – 1918.
- Jachmann, H. (2012) Pilot study to validate PIKE-based inferences at the site level. Pachyderm 52, 72 – 87.
- Jachmann, H. (2013) Indicator framework for efficient and effective wildlife law enforcement. UNODC/ICCWC report.
- Jachmann, H. (2014) CITES/MIKE law enforcement metrics. CITES/MIKE Report.
- Laing S.E., Buckland S.T., Burn R.W., Lambie D. & Amphlett A. (2003) Dung and nest surveys: estimating decay rates. Journal of Applied Ecology 40, 1102-11.
- Lindsay W.K. (1993) Elephants and habitats: the need for clear objectives. Pachyderm 16, 34-40.
- Lindsey, P., Baghaid, M., Bigurubee, G., Cunliffef, S., Dickmang, A., Fitzgeraldh, K., Flymani, M., Gandiwaj, P., Kumchedwak, B., Madopel, M., Morjanm, M., Parkern, A., Steinero, K., Tumentap, P., Uisebq, K. & A. Robson (2021). Attracting investment for Africa's protected areas by creating enabling environments for collaborative management partnerships. Biological Conservation 255, 108979. https://doi.org/10.1016/j.biocon.2021.108979.
- Link W.A. & Barker R.J. (2010) Bayesian inference with ecological applications. Academic Press, London, UK.
- Lyons J.E., Runge M.C., Laskowski H.P. & Kendall W.L. (2008) Monitoring in the Context of Structured Decision-Making and Adaptive Management. Journal of Wildlife Management 72, 1683-92.
- MacKenzie D.I., Nichols J.D., Royle J.A., Pollock K.H., Bailey L.L. & Hines J.E. (2006) Occupancy Estimation and Modeling: Inferring Patterns and Dynamics of Species Occurrence. Academic Press, Burlington, MA, USA.

- McCarthy M.A. & Possingham H.P. (2007) Active adaptive management for conservation. Conservation Biology 21, 956-63.
- Milner-Gulland E.J. & Rowcliffe J.M. (2007) Conservation and Sustainable Use: A Handbook of Techniques. Oxford University Press, Oxford, UK.
- Msoffe F.U., Ogutu J.O., Kaaya J., Bedelian C., Said M.Y., Kifugo S.C., Reid R.S., Neselle M., van Gardingen P. & Thirgood S. (2009) Participatory wildlife surveys in communal lands: a case study from Simanjiro, Tanzania. African Journal of Ecology.
- NASCO (2010). Sustainable financing mechanisms for conservancies in Namibia: analysis and recommendations.
- Parma A.M., Amarasekare P., Mangel M., Moore J., Murdoch W.W., Noonburg E., Pascual M.A., Possingham H.P., Shea K., Wilcox C. & Yu D. (1998) What can adaptive management do for our fish, forests, food and biodiversity? . Integrative Biology, Issues, News and Reviews 1, 16-26.
- Pittiglio, C. (2012). Human - wildlife interface in African Savanna : quantifying landscape fragmentation for predicting wildlife distribution and human - wildlife conflicts. Un. Twente, PhD thesis.
- Royle J.A. & Dorazio R.M. (2008) Hierarchical Modeling and Inference in Ecology: The Analysis of Data from Populations, Metapopulations and Communities. Academic Press, London, U.K.
- Salafsky N., Margoluis R. & Redford K. (2001) Adaptive Management: A Tool for Conservation Practitioners. Biodiversity Support Program, Washington, D.C., USA.
- Scanlon, J. (2020a). U.S. “Wildlife Trade, Origins of COVID-19, and Preventing Future Pandemics”. Written testimony, Congressional International Conservation Caucus.
- Scanlon, J. (2020b) https://www.linkedin.com/pulse/saving-wildlife-requires-new-approach-john-e-scanlon-ao/
- Sutherland W.J., Pullin A.S., Dolman P.M. & Knight T.M. (2004) The need for evidence-based conservation. Trends in Ecology & Evolution 19, 305-8.
- Walters C. (1986) Adaptive Management of Renewable Resources. Macmillan, New York, USA.
- Whitehouse A.M., Hall-Martin A.J. & Knight M.H. (2001) A comparison of methods used to count the elephant population of the Addo Elephant National Park, South Africa. African Journal of Ecology 39, 140-5.
- Williams B.K., Nichols J.D. & Conroy M.J. (2002) Analysis and Management of Animal Populations. Academic Press, San Diego, CA, USA.