

Conservation and Management Strategy for the Elephant in Kenya 2012-2021

Compiled by:

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Plate 4. Winds 2 Family crossing the Ewaso Ng'iro River,
Samburu National Reserve - Lucy King, Save the Elephants





**Conservation and
Management Strategy
for the Elephant
in Kenya**

2012-2021

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Frontcover:

Plate 1. African Elephant.
*Samantha Roberts, Zoological
Society of London*

[TOP] Plate 2.
*Beehive fence. Lucy King,
Save the Elephants*

[BOTTOM] Plate 3.
*KWS veterinary team taking
tissue samples during a collaring
exercise - Charles Ooro, Kenya
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Backcover:

Plate 1. African Elephant.
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[TOP] Plate 42.
*Dr. Dominic Mijele, KWS
vet darting an elephant from
a KWS helicopter in Narok,
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*A KWS ranger learning
to identify individual elephants
- Max Graham, Space for Giants*

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[RIGHT] Plate 5.

Chilli bush used by some farmers to scare away elephants in Laikipi
 - Lucy King, Save the Elephants



[BOTTOM] Plate 6.

Adult female with young calf, Samburu National Reserve, Kenya
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ABBREVIATIONS AND ACRONYMS

AfESG	African Elephant Specialist Group (IUCN-SSC)
AMC	Area Management Committee
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CBO	Community-Based Organisation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of Parties to CITES
DD-BRM	Deputy Director - Biodiversity Research and Monitoring
DD-CS	Deputy Director – Corporate Services
DD-FA	Deputy Director – Finance and Administration
DD-S	Deputy Director – Security
DD-WCS	Deputy Director – Wildlife and Community Service
DEC	District Environmental Committee
EEC	Elephant Executive Committee
EIA	Environment Impact Assessment
EMC	Elephant Management Committee
EPC	Elephant Programme Coordinator
ETC	Elephant Technical Committee
ETIS	Elephant Trade Information System
EU	European Union
FR	Forest Reserve
GoK	Government of Kenya
GSA	Game Scout Association
HEC	Human-Elephant Conflict
H-HC	Head – Human Capital
H-SCM	Head - Species Conservation and Management
H-VET	Head - Veterinary Services
HWC	Human-Wildlife Conflict
IAPS	Invasive Alien Plant Species
ILRI	International Livestock Research Institute
INTERPOL	International Criminal Police Organization
IUCN	International Union for Conservation of Nature
KFS	Kenya Forest Service
KNP	Kenya National Parks
KPR	Kenya Police Reserve
KWS	Kenya Wildlife Service
KWSTI	Kenya Wildlife Service Training Institute
LATF	Lusaka Agreement Task Force
MIKE	Monitoring the Illegal Killing of Elephants



NBSAP	National Biodiversity Strategy and Action Plan
NEMA	National Environmental Management Authority
NGO	Non-Governmental Organisation
NP	National Park
NR	National Reserve
PA	Protected Area
PAC	Problem Animal Control
PES	Payment for Ecosystem Services
PIKE	Proportion of Illegally Killed Elephants
REDD	Reducing Emissions from Deforestation and Forest Degradation
SMART	Specific, Measurable, Achievable, Realistic, and Time-bound
SSC	Species Survival Commission (of IUCN)
STE	Save the Elephants
ToR	Terms of Reference
TRAFFIC	The Wildlife Trade Monitoring Network
WCMD	Wildlife Conservation and Management Department (superceded by KWS)
ZSL	Zoological Society of London



[LEFT]

Plate 7.

Beehive fence used to protect farms from elephant crop-raids in Ngare Mara community, Isiolo.

Lucy King,
Save the Elephants

GLOSSARY



Actions: The activities which need to be implemented to achieve the strategy's objectives and, ultimately, its goals and vision.

Actors: Those individuals responsible for actions.

Adult: A mature individual elephant.

Aggregation: Gathering, which can be as large as 200–500 elephants. This may include dozens of family units and a number of mature males; larger aggregations form mainly during the rainy season in areas where food is plentiful and are usually associated with peak mating activity. Aggregations are also sometimes seen in populations that have been heavily decimated by poaching or other disturbances.

Calf: A young elephant, dependant on the mother (until 3–5 years of age).

CITES: Acronym for 'Convention on International Trade in Endangered Species of Wild Fauna and Flora', a treaty signed in 1975 by many countries to regulate the international trade in wild animals and plants that are included in its Appendices, and in products and derivatives made thereof, including elephants and elephant products.

Compression Hypothesis: High density of elephants, owing to restriction of their range by human settlement.

Cow: An adult female elephant over 15 years old.

Culling: The killing of animals that may be regarded as excess in a population; a strategic game-management tool used by some wildlife officials. With elephants, the aim is for entire family units to be removed at once.

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

Ecosystem: A complete community of living organisms and the non-living materials of their surroundings. Its components include plants, animals, micro-organisms, soil, rocks and minerals, as well as surrounding water sources and the local atmosphere.

Elephas maximus: Asian elephant usually divided into 4 subspecies: E.m. borneensis (Borneo elephant), E. m. indicus (Indian elephant), E. m. maximus (Sri Lankan elephant), E. m. sumatranus (Sumatran elephant).

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). Goals have the same long-term time frame and wide spatial scale as the Vision. Goals use the same criteria for what it means to save a species as those agreed when developing the Vision (for example, striving to achieve ecologically functioning populations).

Goal Target: Goal targets provide a medium-term (typically 5–10 years) subset of the goals. Thus they represent those goals that can realistically be achieved over the lifetime of the strategy (and/or those steps towards achieving the goals that can realistically be achieved over the lifetime of the strategy). Like all targets, goal targets should be SMART.

Group: General term for a number of elephants showing coordinated movement and behaviour.

Growth Rate: The natural increase in the size of a population, otherwise referred to as yearly growth rate.

[LEFT] Plate 8.

Adult female with her young at a waterhole. Samburu National Reserve, Kenya
- Renaud Fulconis. Awely, Wildlife and People

[BELOW] Plate 9.

A large Amboseli bull in musth guarding two females in oestrus
- Cynthia Moss, Amboseli Trust for Elephants

Home-range: Area utilised by an elephant or family group of elephants; depending on the productivity of the region, it may be as small as 14 km² (e.g. at Lake Manyara, Tanzania) or as large as 3500 km² (in arid country, such as the desert of NW Namibia).

Human-Elephant Conflict [HEC]: Any human-elephant interaction which results in negative effects on human social, economic or cultural life, on elephant conservation or on the environment.

Immobilization: Term used to describe the chemical or physical restraint of an animal.

Indicator (of success): A single measure of achievement or a description of the conditions to show that a particular Action had been implemented successfully. Good indicators are measurable, precise, consistent and sensitive.

Indigenous: Originating and living or occurring naturally in an area or environment.

Invasive Alien Plant Species [IAPS]: Non-indigenous introduced plants which are capable of increasing beyond a local area.

Ivory: Material of which elephant tusks are composed (mostly dentine). It is used in the manufacture of a great variety of objects usually of an ornamental nature.

Juvenile: A sub-adolescent individual elephant: often divided into young juvenile (2–5 years old) and old juvenile (5–10 years old).

Keystone Species: A species that has major ecological effects on its habitat and, therefore, on other species living in the same area. Elephants are second only to humans in the alteration of their habitat: e.g. by feeding they may change bush to grassland, by digging for water they provide drinking places for other animals, etc.

Loxodonta africana: African elephant; divided into 2 sub-species: Savannah elephant *L. a. africana* and Forest elephant *L. a. cyclotis*.

Miombo: In East, Central, and South-central Africa, a type of mixed woodland of trees and shrubs, dominated by broad-leaved, deciduous trees of the genera *Brachystegia* and *Julbernardia*.

Mortality: Referring to loss in a population; includes factors such as disease, accidents, starvation, predation and poaching.

Natality: Referring to the birth-rate in a population: usually 3–5% per year in a healthy elephant population.

Objective: Broad summaries of the approaches to be taken in attempting to achieve a strategy's Vision and Goals. Each objective usually refers to a logically related set of threats and constraints; for example, if lack of capacity was identified as a constraint on effective conservation of a species, then one obvious objective would be to develop capacity.



GLOSSARY

Objective Target: Detailed, time-bound summaries of what needs to be achieved to attain a strategy's Vision and Goals. Objective targets help to group actions into logically related clusters.

Parastatal: A state organisation that is semi-autonomous from the central Government department, often run by a board. Parastatal organisations are free to retain any revenue they earn rather than have to remit it to a central treasury.

Poaching: In the case of elephants, illegal killing usually for ivory but can also be for meat.

Pocketed Herd: Group of elephants confined in a relatively small area, from which they are unable to leave, usually surrounded by human development. May be thought of as 'islands of elephants in a sea of humanity'.

Population: All the elephants in a region, including numerous clans, and independent adult males. All elephants may have some contact with each other, especially during the wet season when large aggregations may form. Populations may be considered sub-populations in the context of larger 'meta-populations'. For instance, the Amboseli elephants constitute a population of elephants, though they are a sub-population of a more extensive cross-border meta-population of elephants, which may include Serengeti-Mara-Magadi-Natron-Longido-Amboseli-Kilimanjaro-Tsavo-Mkomazi.

Population Census: Process of obtaining an estimate of population size, either through attempting to count all individuals or a sample of individuals and then estimating population size statistically.

Population Density: Average number of elephants per unit area in a region; usually given as elephants/km².

Problem Elephant Control [PEC]: Methods used to reduce the impact of so-called 'problem elephants' who may repeatedly fence-break, crop-raid, kill livestock and/or humans. Solutions may involve translocation or exclusion (i.e. with ditches, electric-fencing) or, even, killing offenders.

Problem Tree: A visualization technique, useful for informing the development of objectives, which links proximate threats with their ultimate causes and constraints. Proximate threats to species are represented at the bottom of the diagram, with ultimate causes at the top.

Proboscidean: A member of the order Proboscidea; elephants and elephant relatives living and extinct, with a long, flexible snout, such as a trunk.

Recruitment: Increase in a population, usually as the result of births exceeding deaths; may also be augmented by immigration.

Savannah: Subtropical or tropical grassland with widely spaced trees, characterized by extended wet and dry seasons.

SMART: Refers to objectives/targets and indicates that they should be Specific, Measurable, Achievable, Realistic, and Time-bound.

Species: A taxonomic group whose members can interbreed and produce viable fertile offspring; also based on genetic and morphological differences between species.

Target: A measure applied to goals or objectives, as appropriate. Targets should always be SMART. Targets are measurable steps that describe what needs to be accomplished to meet a Goal or Objective.

[TOP RIGHT] Plate 10.

Samburu with elephants in the Ewaso Ng'iro
- Lucy King, Save the Elephants



Threat: A factor which causes either a substantial decline in the numbers of individuals of a species, or a substantial contraction of the 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). 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)).

Translocation: Capture, transportation and release of animals from one part of their range into another (reintroduction is a specialised form of translocation where the recipient area is part of the historic range but where elephant no longer exist).

Tusk: Permanent second upper incisors composed mostly of dentine. The tusk is one source of real ivory. In *Loxodonta*, both sexes usually have tusks. They grow throughout life at a rate of about 17 cm/year, averaging 61 kg at 60 years in bulls and 9.2 kg in cows; record-weight = 106 kg, record length = 355 cm. In *Elephas*, only some males have tusks.

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 its relationship with humans). The Vision is an essential part of the species conservation strategy process in that stakeholders should discuss explicitly what it means to save a species and use the answer to this question to develop the associated Goals. The Vision should, therefore, be derived from a range-wide analysis of a species' status and a detailed presentation of the long-term, range-wide conservation needs of the species (informed by the threat analysis).

Vulnerable: IUCN Red List category of threat. A taxon is given this status when it is facing risk of extinction in the wild; when the best available evidence indicates that the taxon meets the criteria for the category Vulnerable as defined by any of the IUCN criteria (A to E).

[BOTTOM RIGHT]

Plate 11.

A typical sub-unit of an elephant family: an adult female, her adult daughter and their calves - Cynthia Moss, Amboseli Trust for Elephants



FOREWORD

by the Chairman of the Board of Trustees of KWS

The Kenya Wildlife Service (KWS) is a State Corporation established by the Act of Parliament, CAP 376 and amendment Act No. 16 of 1989 with a mandate of wildlife conservation and management in Kenya. Since its inception in 1990, KWS has achieved much in curbing poaching, enlisting support in conservation and establishing infrastructure and human capacity development. The success has been made possible through support from the Government of Kenya, and local and international partners. The vision of KWS is to become a "World Leader in Wildlife Conservation" with a mission to "sustainably conserve and manage Kenya's wildlife and its habitats in collaboration with stakeholders for posterity".

Kenya's elephant population was reduced from 167,000 in 1973 to 20,000 individuals in 1989 due to massive poaching for the ivory. As a result of the ivory trade ban in 1989 and increased security efforts by KWS, poaching was significantly reduced by the 1990s. The elephant range in Kenya covers almost a fifth of the country of which almost half is within protected areas. The subsequent increase in elephant numbers coupled with loss and fragmentation of elephant range, as a result of human population increase and limited long term land use planning, has brought new management challenges. These challenges arise from conflicts between people and elephants as they compete for limited resources and habitat degradation by elephants due to confinement. Human-elephant conflict is emerging as the major threat to elephant conservation in Kenya. Its effective mitigation along with enhanced security will require dedicated effort from KWS, relevant government departments, private landholders, communities, county councils and local and international partners. The highly threatened elephant is Kenya's national treasure and KWS will continue to support all stakeholders in its conservation.

None of this can be done without financial resources, and KWS is taking steps towards self sustainability in this regard. Meanwhile, Kenya thanks donors for their continued support in elephant conservation. Currently, there is increased allocation of funds by the Government to wildlife conservation and there are a number of new initiatives by KWS to increase revenue. The current KWS budget of Ksh 5.1 billion represents an increased allocation of 13.3 percent from the previous allocation. The Government is increasing its support and has promised to improve budget allocation to KWS. We can confirm that there will be continued internal financial support for the core business of elephant conservation. KWS will continue to support local landowners and communities in elephant conservation and work closely with NGOs and private sector.

To enhance these successes, KWS regularly reviews its policies and activities. The previous KWS Strategic Plan has been successfully completed before its end date and a new strategic formulated and currently being implemented. These strategies are designed to be achievable irrespective of socio-political and economic changes. The strategies are now also resilient to internal managerial changes. We strive to achieve management that is people, science and technology driven. To this end, I am proud to present to you the first Edition of the Conservation and Management Strategy for the Elephant in Kenya.

The Board of Trustees calls upon the Government of Kenya, local landowners and communities, private sector, donors and conservation partners to support the implementation of the activities in this document.

Hon. David Mwiraria
Chairman, KWS Board of Trustees



The highly threatened elephant is Kenya's national treasure and KWS will continue to support all stakeholders in its conservation



[TOP] Plate 12.

Adult male, Mara ecosystem.
Renaud Fulconis - Awely, Wildlife and People



“ We cannot conserve elephants alone as a nation; regional cooperation is an important factor in the conservation of the African elephant to increase the numbers, secure more space and minimise human elephant conflict ”

[TOP & RIGHT] **Plate 13.**

Mountain Bull's movements up and down Mount Kenya have been monitored since 2006 using GSM tracking collars.

Saba Douglas-Hamilton, Save the Elephants



PREFACE

by the Director of KWS

We are happy that after many years, and as part of policy review and through comprehensive stakeholder involvement, we have completed the first National Conservation and Management Strategy for the Elephant (2012 – 2021). This process has taken due consideration of relevant existing policies and legislations including the KWS 2008 – 2012 Strategic Plan.

I am proud to say that this document lays the foundation for securing the future of the elephant for posterity not only as Kenya's celebrated heritage but the world's. This is not going to be easy given that Kenya's human population is growing and ethical solutions need to be found for humans and elephants to co-exist as they have done over millennia. The large habitats in several areas of the country especially the former elephant range areas in northern Kenya need to be secured for elephants to move back in. This will relieve pressure in existing core populations experiencing conflict with humans. The existing law-enforcement policy through a well-equipped and trained para-military force needs to be sustained under increasing poaching pressure. Overall progress in the longer term will depend on good science, intensified protection, sustained monitoring and community engagement and learning from previous lessons. In addition, the private landowners, communities and county councils will continue playing their important role in underpinning the national population.

Without the very best people to implement the strategy we have little hope of success and to this end Kenya Wildlife Service (KWS) is committed to greater capacity development for elephant conservation staff. In addition to ensuring effective elephant security and monitoring, KWS has also pushed forward the Conservation Area concept where field wardens are required to assume more responsibilities for their areas, and where we encourage a stronger link with field scientists on elephant management. Headquarters staff, including the elephant coordinator, will be required to facilitate, coordinate and advise.

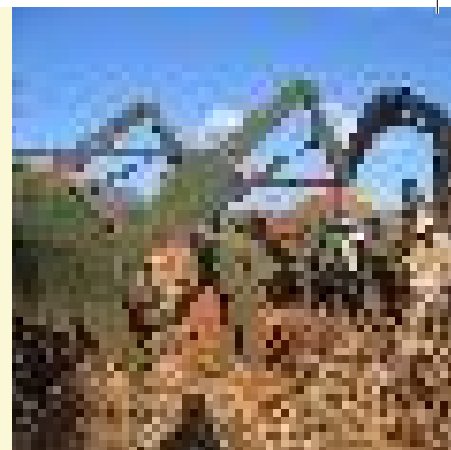
We cannot conserve elephants alone as a nation; regional cooperation is an important factor in the conservation of the African elephant to increase the numbers, secure more space and minimise human elephant conflict. We will work closely with other elephant Range States on CITES matters and also diplomatically engage with consumer countries.

Since its inception in 1990, KWS has realised much in curbing illegal activities, enhancing community awareness, mitigating human elephant conflicts, fund raising and in developing human capacity. The success has been possible through support from the Government of Kenya (GoK), communities, private landowners, local and international partners. We sincerely thank them all for their unwavering support through difficult times.

Please join us in effectively executing our ambitious plan and we look forward to the elephant surviving on our beautiful ecosystems and landscapes for another century and beyond.

Julius K. Kipng'etich, EBS
Director, KWS

INTRODUCTORY COMMENTS BY CHAIR, IUCN SSC AFRICAN ELEPHANT SPECIALIST GROUP



In the field of elephant conservation and management, there is a growing need to be strategic, setting ambitious goals with realistic targets and measurable milestones from which to gauge our progress in dealing with the rapidly increasing threats and challenges we face.

In meeting these challenges, the Kenya Wildlife Service (KWS) has developed this Conservation and Management Strategy for the Elephant in Kenya. This Strategy has been a long time in the making; it is the result of hard work by countless individuals and extensive consultations with local communities as well as a host of interested stakeholders in the international conservation community. Importantly, however, it serves to demonstrate the country's deep and indefatigable commitment to the nation's elephants. Kenya is a country whose elephant populations have suffered tremendous losses but also made remarkable recoveries and successes. This new Strategy is a statement of the country's continuing efforts to secure a safe and lasting future for this widely-celebrated national treasure in an atmosphere of growing threats and ever-more challenging circumstances; most notably the growth of human populations and the concomitant loss of habitat as more and more land is converted to human-dominated landscapes.

For many years Kenya's approach to elephant conservation has been guided by the KWS 1991-1996 Policy Framework and Development Programme (Anon, 1991), more commonly known as the 'Zebra Books'. A long-lived, landmark policy process, the Zebra Books provided Kenya's primary policy guidance for almost two decades. Although elephants had always been considered a valuable and charismatic contributor to Kenya's impressive biological diversity, these documents gave prominence to the conservation of elephants for Kenya as a nation and positioned elephants as an unparalleled national asset.

Many important initiatives grew from the KWS Policy Framework and some had important impacts on the conservation of Kenya's elephants. One noteworthy example, which actually set a precedent for other African elephant range states, was the creation of the position of the Elephant Programme Coordinator. This post, held by Dr. Joyce Poole (1991-94), Dr. John Waithaka (1994-1997), Mr. Patrick Omondi (1997-2006) and most recently, Mr. Moses Litoroh (2006-2010), has been afforded prominence by KWS, and has most definitely enhanced Kenya's ability to pursue a constant and coordinated approach to applied research in support of management action for elephant populations across the country. This approach also allowed Kenya, very early on, to begin grappling with the thorny issue of managing human-elephant conflict and the location-specific challenges it poses to the future for the co-existence of humans and elephants across the country.

The Zebra Books also helped to focus Kenya's attention on the issue of poaching and illegal trade in ivory. From this standpoint, Kenya's strong and unwavering policy stance has provided them the impetus to become an outspoken voice for elephants, most notably within CITES; this role now widely recognized not just by their fellow range states in Africa but by the entire international conservation community. This, and Kenya's deep engagement of the non-governmental community, the donor community and the international public in furthering their elephant conservation goals, has made them an acknowledged champion for elephant-friendly policy and action.

“ This new Strategy is a statement of the country’s continuing efforts to secure a safe and lasting future for this widely-celebrated national treasure in an atmosphere of growing threats and ever-more challenging circumstances; most notably the growth of human populations and the concomitant loss of habitat ”

This new Strategy for the conservation and management of Kenya’s elephants is both long overdue and all-the-more necessary now than ever before because despite the continuing recovery of their national herds, there is no obvious reason for complacency. Like all its fellow African elephant range States, Kenya faces serious and growing challenges on many fronts. Kenya’s proximity to neighbouring countries at war, and the accompanying and inevitably uncontrollable flow of arms, renders the nation and its elephants at continued risk; all the more worrying in the face of a growing and potentially insatiable demand for ivory as a luxury item in emerging economies of the world. And with Kenya’s steadily growing human population, shrinking areas of arable land, and limited long-term land-use planning at the national level, increasing conflict between the country’s rural communities and its elephants is inevitable. Indeed, a difficult future to navigate.

“Conservation and Management Strategy for the Elephant in Kenya (2012 – 2021)” represents the hard work of many dedicated conservation professionals and the voices of many who were given the opportunity to actively participate in its formulation. While it identifies the current threats, it also explores the emerging opportunities and provides a framework for coordinated and concerted action over the next ten years to assure the persistence of elephants in Kenya, both as an economic asset for its national constituency, and as a symbol of Kenya’s deep commitment to the conservation of biodiversity. In joining 10 of their fellow African elephant range states to undertake such a targeted and dedicated planning approach for the conservation and management of elephants at the national level, I hope it will serve as clarion call for others to follow suit and a beacon of hope for the future of elephants over the coming decade.

Dr. Holly T. Dublin

[TOP] Plate 14.

Elephant translocations in Tsavo
- Richard Kock

[RIGHT] Plate 15.

Rescuing an orphaned elephant
whose mother was killed by
poachers in north-west Laikipia,
- Max Graham, Space for Giants



EXECUTIVE SUMMARY

Strategy for Conservation and Management of the Elephant in Kenya

The future of African elephants is of critical importance to the Government of Kenya for several reasons. Firstly, elephants are a species of conservation concern with numbers reduced dramatically over the last 100 years mainly as a consequence of trade in ivory. In Kenya alone, the elephant population declined from around 167,000 in 1973 to just 20,000 in 1990. Secondly, elephants are a flagship species, a highly charismatic animal that can serve as a rallying point for conservation, capturing the attention of people from all over the world and generating significant returns from wildlife-based tourism. Thirdly, elephants are an umbrella species as their conservation depends on large areas of the ecosystems being conserved and protected and therefore serves the objective of wider biodiversity conservation. Fourthly, outside of protected areas, the conflict between elephants and people is intense, especially crop raiding and related risks to life and livelihood has major implications for public support for conservation. Fifthly, elephants are keystone species with significant roles in ecological dynamics and therefore their persistence is important to the conservation of other elements of biodiversity.

The existing framework for the conservation and management of elephants, an annex in the 1991-1996 KWS Framework and Development Programme, largely reflects the focus on addressing the unprecedented levels of elephant poaching occurring at the time. This combined with the enhanced capacity of the Kenya Wildlife Service (KWS) anti-poaching unit and the international ban in the trade in ivory successfully reduced the poaching to a reasonable level enabling population recovery. The elephant population of Kenya in 2010 is estimated at around 35,000 and increasing. Elephants have and continue to return to parts of their former range where they haven't been seen for nearly 30 years. However the human population of Kenya has also grown dramatically over this period and the challenge of conserving elephants in Kenya today is quite different to what it was 20-30 years ago. Human settlement and cultivation of elephant range areas, associated problems of human-elephant conflict, the creation of habitat islands and the compression effect on other elements of biodiversity have all emerged as hugely difficult problems that threaten the future of elephants in Kenya. These problems are not easy to solve. In addition, recent reports from the field suggest that there is an upsurge in elephant poaching, most probably driven by the demand for ivory in Asia. The recent large seizures of ivory at the sea and airports in the country illustrate the scale of the problem. It is for all of these reasons that a dedicated elephant conservation and management strategy is necessary for Kenya.

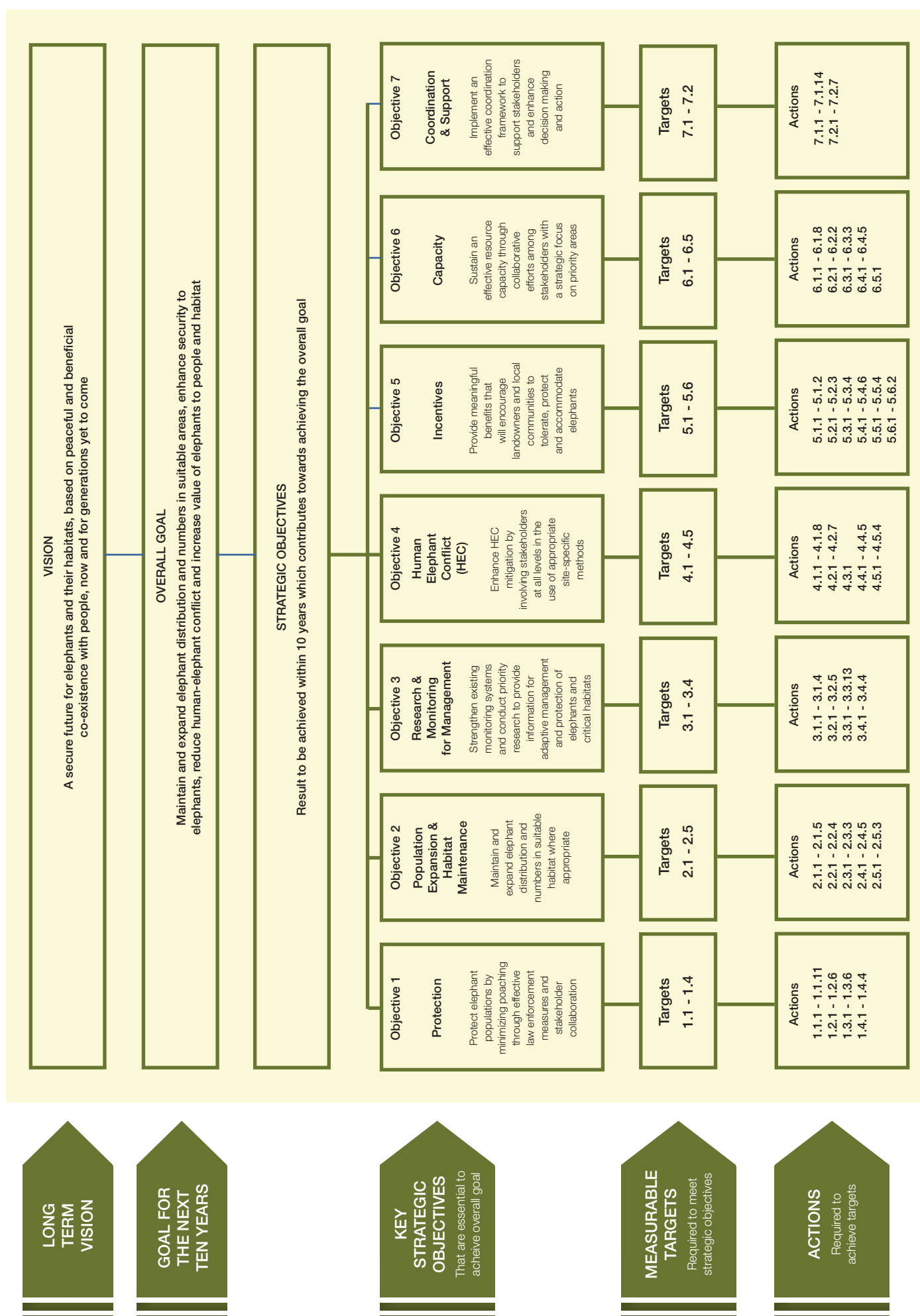
This 10 year strategy has been developed through a highly consultative and participatory process, involving local stakeholders from across Kenya and international experts from around the world. The process culminated in a National stakeholder workshop, held at Mpala Research Centre and it was here that this strategy document was formulated. The long term vision for the strategy is **“a secure future for elephants and their habitats, based on peaceful and beneficial co-existence with people, now and for generations yet to come”**. While the overall goal for the next ten years is to **“maintain and expand elephant distribution and numbers in suitable areas, enhance security to elephants, reduce human-elephant conflict and increase value of elephants to people and habitat”**. This will be achieved by focussing efforts and resources on seven broad strategic objectives, each associated with a set of specific actions and an associated set of measurable targets to gauge performance (Figure 1). The strategy is bold, ambitious and forward thinking. It tackles problems far more complex than just the poaching issue and involves different sectors and proposes interdisciplinary initiatives that take into consideration the potential role of climate change, new emerging funding opportunities, local livelihoods and the sensitive balance that is needed in an emerging economy.

There is one key theme that cuts across all of these strategic objectives; coordination, KWS alone cannot achieve what is set out in this strategy. There are several reasons for this. Firstly, much of Kenya's current and future elephant range occurs outside of nationally gazetted protected areas and the future of elephants in these places will depend on whether or not they are tolerated by local landowners and communities. Therefore, this strategy seeks to engage and devolve responsibility to these groups in elephant conservation and management, particularly in key strategic locations, such as dispersal areas, corridors, human-elephant conflict hot spots and in the places where land-use is compatible with elephant conservation, such as across the more arid and semi-arid parts of Kenya. Secondly, there are several elephant populations that range beyond Kenya into neighbouring countries, requiring close collaboration with Kenya's neighbours. Thirdly, land-use planning, a key component of this strategy, requires close collaboration with other government sectors and their development partners, whose own plans and priorities may impinge on elephant conservation. Fourthly, there is still a lot we need to know about elephants for their effective conservation and management and, therefore need more focussed research and monitoring in partnership with research organisations and individual researchers. Lastly, much of the what this strategy sets out to achieve requires resources and capacity that will require support of other stakeholders.

“ The strategy is bold, ambitious and forward thinking - it tackles problems far more complex than just the poaching issue and involves different sectors and proposes interdisciplinary initiatives that take into consideration the potential role of climate change, new emerging funding opportunities, local livelihoods and the sensitive balance that is needed in an emerging economy ”

[BELOW] **Plate 16.** Tourists watching elephant in Mara – Charles Ooro, Kenya Wildlife Service





[FIGURE 1] Plan-at-a-glance structure of the 2011-2020 Elephant Conservation and Management Strategy

Plate 17.

An inquisitive young calf covered in mud
Renaud Fulconis - Awely, Wildlife and People



STRATEGY FOR CONSERVATION AND MANAGEMENT OF THE ELEPHANT IN KENYA

DECLARATION



Recognising the input from a wide range of stakeholders through the regional consultation process and the need of all stakeholders to be involved in the conservation of African elephants in Kenya;

And realising the paramount importance of reducing human-elephant conflict for the future well-being of the people of Kenya and their harmonious coexistence with species like elephant;

And recognising the remarkable achievements of all of those dedicated to the effective conservation of Kenya's elephants;

And realising that a sustained strategic and cooperative approach to conservation and management of this species is necessary for continued success;

And recognizing the need to base strategy on sound science;

We, the participants at the final National Strategic Workshop to formulate the Conservation and Management Strategy for the Elephant in Kenya;

Unanimously commit ourselves to working together as stakeholders to achieve effective elephant conservation in Kenya and to implement this strategy with the Vision, namely that:

A secure future for elephants and their habitats, based on peaceful and beneficial co-existence with people, now and for generations yet to come.

1. Introduction

Elephants present tremendous challenges for their successful conservation management, challenges that are in certain aspects unique and in others, typical of wildlife conservation in general. First and foremost, it is important to keep in mind that elephants, like all other wildlife, do not exist separately from the ecosystems they inhabit. Successful conservation of elephants should focus not simply on the animals alone, but should fit within the larger biodiversity goals of Kenya. This will include people, habitats, landscapes and the role elephants play in these areas. The strategy is based on broad principles and focuses on collaboration and, where possible, decentralisation and devolution.

At the centre of the challenge is the biology of elephants. Any management solutions must recognise and accommodate the key aspects of elephant biology, including their:

- Large size and consequent life-history parameters – long potential lifespan, long calf dependence, slow demographic variables resulting in low population growth rates.
- Generalist feeding behaviour, which requires large quantities of vegetation from all layers, ranging in quality from nutritious fruits to coarse grasses and woody stems, from agricultural crops to shrubs and trees.
- High mobility, allowing – indeed requiring – large home ranges.
- Exceptional intelligence, communication and memory, leading to flexible and variable responses to changing habitat conditions and disturbance, as well as recollection of habitat resources and of conflict with people.
- High sociality, with matrilineal family groups as the context for social learning. This social bonding and capacity for learning increases behavioural flexibility, with the passing-on of acquired knowledge, and is also a potential vulnerability, in that if disrupted by the loss of key individuals it can result in aberrant behaviour.

A further and equally important aspect of the challenge of elephant management is the various, and often strongly held, values that people attribute to them. Elephants are:

- A 'flagship' species, a charismatic terrestrial mammal, which can be used to generate interest in, and financial support for, the conservation of all wildlife which share their habitats.
- An 'umbrella' species, whose protection provides collateral security for overall biodiversity and for the tourist industry.
- A 'conflict' species, an economic burden similar to other wild animals that affect the livelihood interests of people, through their contribution to crop failure, livestock mortality, property damage and injury or loss of life, normally driven by lack of land-use and zonation plans. There are many factors, including climate and human actions, that contribute to agricultural and property losses, which in numerical terms may have greater impact than elephants, but in the case of elephants, the effects are dramatic and, at the time of the event, can be catastrophic.
- An 'architect' species, capable of modifying habitats to the benefit or detriment of different plant and animal species on a local or wider scale, depending on the nature and extent of the impact. In cases where the presence of elephants has a strong influence on other species, they may be considered a 'keystone' species, whose removal is likely to have a correspondingly strong, even 'cascading' effect on the structure and function of ecosystems.

All these aspects have bearing on the approaches that should be taken in elephant conservation and management. They create difficulties, but also opportunities. These various aspects form the theme of the National Elephant Conservation and Management Strategy for Kenya.

[TOP LEFT] Plate 18.

The Ewaso Ng'iro river is a vital resource for elephants in Northern Kenya - Lucy King, Save the Elephants

1.1 Status of elephants in Kenya

Two factors have a large effect in determining the numbers and distribution of elephants in Kenya, and elsewhere in Africa. These factors are poaching or hunting, and competition for or conversion of land by people. As described by Parker & Graham (1989), there has been a steady decrease in elephant habitat over many decades throughout Africa wherever human populations have increased. They proposed a linear, negative relationship between human and elephant density. Hoare & du Toit (1999), working in rural Zimbabwe, refined this model by noting that coexistence is possible at low human densities, while loss of habitat occurs at a critical threshold level of roughly 15 people per km². The progressive loss of habitat, and loss of links between habitat patches, has gone furthest in West Africa, where most elephants now live in unconnected habitat 'islands', and in South Africa, where most elephant populations are now isolated behind fences. In East African savannahs, Southern African miombo woodlands and Central African forests, habitat areas that were not suitable for cultivation have persisted as elephant habitat for longer periods, although humans are now encroaching on land formerly considered marginal for agriculture.

Hunting can, and has been seen to, eliminate elephants from habitat areas, even when human land use would otherwise allow coexistence. Elephants were effectively eradicated from large areas of Africa during the intensive ivory trade of the 18th and particularly late 19th centuries (Spinage, 1973), when ivory exploitation was often combined with the trade in human slaves. The elephant populations of the mid-20th century were in recovery from this massive depletion, erupting into woodland habitats that had grown up in the absence of elephants (Skarpe et al., 2004). At this time in East Africa, a number of perceived 'elephant problems' were encountered, with populations reportedly increasing unprecedentedly in protected areas (PAs) (e.g. Tsavo National Park (NP), as reported by Glover (1963) among many others). Hunting for the ivory trade began increasing again during the 1970s and this was another factor that caused the population increase apparent within PAs, as elephants detected the danger from people, sought the safety of sanctuaries and increased local population densities.

The international trade in ivory, which had been increasing towards the end of the 1960s, accelerated dramatically due to a large illegal component during the 1970s and 1980s, leading to rapid declines in elephant populations across West, Central, East and parts of Southern Africa. Between 1973 and 1990, elephant numbers in Kenya catastrophically dropped from some 167,000 to a minimum of around 20,000 (Douglas-Hamilton, 1989; Joyce Poole, pers. comm., 2010). From 1990, after the formation of a more effective management authority, the Kenya Wildlife Service (KWS) and the end of legal international ivory trade (through elevation of African elephants to Appendix I of CITES), the national elephant population gradually increased to about 35,000 in 2010, according to KWS internal estimates.

Since the initial drop in ivory sales and markets after the ban in 1989, there have been fluctuations in the trade. However, in the first decade of the new century, there was a rise in the price of ivory, coinciding with an increase in ivory demand from those with the desire for it and with the economic means to obtain it (Stiles & Esmond Martin, 2009). Many believe the down-listing of four Southern African elephant populations, along with two legal 'one-off sales' of ivory, have led to a recent dramatic resurgence of poaching and illegal trade. In some areas, the illegal trade has been increasing since the mid-1990s and this is associated with increases in elephant poaching in range states with low levels of law enforcement, corruption and political instability (Dublin et al., 1995). This situation has continued with increasing trade pressures on elephant ivory associated with the emergence of the far eastern economies.

Kenya's elephants occur in both savannahs and forests, although all are considered to be the savannah subspecies *Loxodonta africana africana*. The largest range areas for the savannah populations are the Tsavo ecosystem and its environs, and the Laikipia-Samburu ecosystem and contiguous areas to the north. The forest-dwelling populations occur mainly in the Aberdares and Mount Kenya, with small, isolated populations in coastal forests and Mount Elgon.

Some areas of former range, particularly in the northern parts of Kenya, are being re-occupied as security has improved. At the same time, however, people have occupied many other areas that were former elephant range, through expanded settlement and conversion of rangeland to agriculture. Therefore, elephant habitat range in most parts of the country has been reduced while habitat fragmentation and land-use conflict has increased.

1.1.1 Elephant numbers, mortality and threats

Estimates of elephant numbers are used to compare population status in different parts of elephant range within countries, regions and across the continent. Estimates are also used to evaluate trends of population growth or decline. A variety of methods, from aerial total counts to rough guesses, have been used to obtain population estimates, producing results with varying degrees of accuracy and precision. It should be noted that comparisons between sites and through time are truly valid only when using data that have been collected using the same methodologies. Producing regional or national totals by adding up estimates of different quality could be justified to give a general total, but should not be relied upon for accurate descriptions of elephant status.

Estimating numbers and distribution of elephant populations in savannah habitat is relatively straightforward, since visibility in the open vegetation allows direct counting using standard techniques common across Africa, such as aerial total or sample counts and ground counts or individual recognition studies. Elephant populations in thick bushland or forest, by contrast, must be estimated by indirect methods, primarily involving dung surveys. These methods when properly designed and undertaken can produce figures that are as precise as direct counts (Barnes, 2001; Hedges & Lawson, 2006). In some cases, the only available estimate for a remote population is an 'informed guess'. As noted above, it would be misleading to estimate a single set of figures for the size or trend of Kenya's national elephant meta-population by simple addition of estimates of all the individual populations. Trend data, based on repeated estimates using the same methodology, are available for some key populations and can be used to contribute to an overall picture of the current position and future prospects of elephants in the country.

There are three sources of information on elephant status in Kenya:

1. Reports prepared by KWS (Kenya Wildlife Service) staff and consultants.
2. KWS Policy Framework and Development Programme 1991-1996, otherwise called KWS 'Zebra Books': Annex 7 The Conservation of Elephants and Rhinos.
3. The African Elephant Status Reports (formerly the African Elephant Database) which provided national-level summaries on a more-or-less regular basis since 1995 by the African Elephant Specialist Group (AfESG) of the Species Survival Commission (SSC) of the International Union for Conservation of Nature (IUCN), using information supplied by KWS.

All three sources were used to present a description of elephant status, with the AfESG reports providing a broad overview and historical summary and the most recent report (Thouless et al., 2008) providing a more detailed analysis.

The AfESG reports dating from 1995 to 2007 provide a summary of comparable data on numbers with a clear outline of the type and quality of data, and a thorough discussion of methodological issues surrounding the reliability of survey data. The results for Kenya from the AfESG reports from 1995 (Said et al., 1995), 1998 (Barnes et al., 1999), 2002 (Blanc et al., 2002) and 2006 (Blanc et al., 2007) are provided in Table 1. The results were provided for different survey areas in the different reports; they have been re-grouped into KWS Conservation Areas (regions) for the purposes of this national strategy. An up-to-date summary of elephant numbers based on KWS data is provided in Table 2.

Population by KWS Conservation Regions / Areas	1995				1998				2002				2006			
	Elephant numbers		Date of est.	Data type / quality	Elephant numbers		Date of est.	Data type / quality	Elephant numbers		Date of est.	Data type / quality	Elephant numbers		Date of est.	Data type / quality
	Estimate	95% CL			Estimate	95% CL			Estimate	95% CL			Estimate	95% CL		
Coast Area																
Shimba Hills Ecosystem	300	250	1992	DC3	464		1997	AT1	658		1999	IR1	649	151	2002	DC2
Kilifi District	34	46	1993	AS2												
Arabuko-Sokoke Forest Reserve (FR)	78	12	1991	DC3	100	50	1996	DC3	184	43	2002	DC1	184	43	2002	DC1
Tana River Delta									20		2002	IG3	20		2002	IG3
Tana River Primate National Reserve (NR)													30		2005	OG3
Lamu District	264	508	1993	AS2	150		1996	IG3	82		2000	AT3	82		2000	AT3
Boni & Doodori NRs									50	46	2000	DC3	50	46	2000	DC3
Subtotal Coast	676				714				994				1,015			
% National Total	3.0%				2.6%				3.6%				3.4%			
Tsavo Area																
Tsavo NP	6,270		1994	AT2					8,344		2002	AT3	9,021		2005	AT3
Tsavo (Outside) Ecosystem	805		1994	AT2					877		2002	AT3	1,335		2005	AT3
South Kitui NR													0		2005	AT3
Tsavo Ecosystem					7,371		1997	AT3								
Subtotal Tsavo	7,075				7,371				9,221				10,356			
% National Total	31.2%				27.0%				33.3%				35.0%			
Northern Area																
Garissa District	178	340	1988	AS2												
Kora NP									5		2002	AT2	5		2002	AT2
North Kitui NR									0		2002	AT2	0		2002	AT2
Meru NP					0		1997	AT3	272		2002	AT2	272		2002	AT2
Bisanadi NR					360		1997	AT3	100		2002	AT2	100		2002	AT2
Meru NP & Bisanadi NR	264		1992	AT												
Meru North Dispersal Areas	100		1995	IG3					36		2002	AT3	36		2002	AT3
Marsabit NP	267		1993	AT2	500		1998	IG3	500		1998	IG3	150		2005	IG3
Subtotal Northern	809				860				913				563			
% National Total	3.6%				3.1%				3.3%				1.9%			
Southern Area																
Amboseli ecosystem	870		1995	IR1	980		1998	IR1	1,100		2002	IR1	1,417		2005	IR1
Subtotal Southern	870				980				1,100				1,417			
% National Total	3.8%				3.6%				4.0%				4.8%			

[TABLE 1] Summary of elephant population estimates from 1995 to 2006 (from AfESG reports, data rearranged by KWS Conservation Areas).

Population by KWS Conservation Regions / Areas	1995				1998				2002				2006			
	Elephant numbers		Date of est.	Data type / quality	Elephant numbers		Date of est.	Data type / quality	Elephant numbers		Date of est.	Data type / quality	Elephant numbers		Date of est.	Data type / quality
	Estimate	95% CL			Estimate	95% CL			Estimate	95% CL			Estimate	95% CL		
Mountain Area																
Mwea NR	48		1995	AT/ IR1	55		1998	GT1	55		1998	GT1	55		1998	GT1
Aberdare NP	1,036		1994	DC3					1,822	729	1990	DC2	1,840	461	2005	IG3
Aberdare Outside	1,464		1990	IG3					700		1990	OG3	1,700	472	2005	IG3
Aberdare NP & FR					4,120	1,596	1998	DC2								
Mt Kenya NP & FR	4,245	1740	1991	DC2	4,022	1,083	1998	DC2	2,911	640	2001	DC1	2,911	640	2001	DC1
Imenti FR	92	279	1994	DC3	156	137	1997	DC3								
Kipiriri FR													13	25	2005	IG3
Leroki Forest	307	265	1992	DC3	210	354	1997	DC3	210	354	1997	DC3	210	354	1997	DC3
Samburu -Laikipia Ecosystem	2,969		1992	AT2					5,447		2002	AT3	5,447		2002	AT3
Samburu District					1,224	898	1996	AS2								
Laikipia District					2,436		1996	AT3								
Matthews Forest	650		1992	DC3	630	215	1992	DC2								
Marmanet Forest Complex	50	50	1992	DC3												
Subtotal Mountain	10,861				12,853				11,145				12,176			
% National Total	47.9%				47.0%				40.2%				41.1%			
Central Rift Area																
Nguruman					150	50	1998	IG3	150	50	1998	IG3	120	30	2005	IG3
Masai Mara NR	1,098		1994	AT	1,000		1998	AT3	1,655		2002	AT3	1,655		2002	AT3
Masai Mara (Outside)	387		1994	AT	450		1998	AT3	461		2002	AT3	461		2002	AT3
Mau Forest Complex	250	50	1992	DC3	1,003		1995	DC3	1,003		1995	DC3	1,003		1995	DC3
Trans-Mara Forest									200	139	1997	DC3	200	139	1997	DC3
Subtotal Central Rift	1,735				2,603				3,469				3,439			
% National Total	7.7%				9.5%				12.5%				11.6%			
Western Area																
Mt Elgon	52	68	1999	DC3	1,114	836	1996	DC3	400		1999	IG3	139		2002	IG3
Nasolot / South Turkana / Rimoi / Kamnarok	580		1992	AT	852		1997	AT3								
Kerio Valley Conservation & dispersal areas									490		2002	AT3	490		2002	AT3
Subtotal Western	632				1,966				890				629			
% National Total	2.8%				7.2%				3.2%				2.1%			
TOTAL	22,658				27,347				27,732				29,595			

Data types: AT=aerial total count; IR=individual recognition study; GT=ground total count; AS=aerial sample count; DC=dung count; IG=informed guess; OG=other guess. Data quality: 1-3, highest to lowest, blank cells represent data not collected.

[TABLE 1] (cont). Summary of elephant population estimates from 1995 to 2006 (from AfESG reports, data rearranged by KWS Conservation Areas).

Population by KWS conservation area	Estimated elephant numbers	Year of estimate
Aberdares National Park	1,920	2007
Aberdares (Outside)	1,780	2007
Amboseli	1420	2009
Arabuko Sokoke Forests Reserve	150	2009
Bisanadi National Reserve	30	2007
Boni and Dodori National Reserve	150	1996
Kerio Valley Dispersal Area	490	2002
Kipipiri Forest Reserve	56	2007
Kora National Park and Rahole National Reserve	58	2007
Lamu District	100	2009
Loroki Forest	210	1997
Masai Mara Game Reserve	2,072	2007
Narok/Mara Dispersal Area	181	2006
Mau Forest Complex	1,003	1995
Meru National Park	268	2007
Meru North Dispersal Area	391	2007
Mt. Elgon National Park & Reserve	350	2009
Mt. Kenya National Park & Reserve	3,700	2009
Mwea National Reserve	55	1998
Nguruman	300	2009
Shimba Hills National Reserve	400	2007
North Kitui National Reserve	0	2008
Samburu/Laikipia Ecosystem	7,415	2008
Marsabit Ecosystem	319	2008
South Kitui National Reserve	0	2008
Tana River Delta	20	2002
Tana River Primate National Reserve	30	2005
Transmara Forest	600	2007
Tsavo National Park	10,346	2008
Tsavo (Outside)	1,387	2008
TOTAL	35,201	2010

[TABLE 2] Summary of the most up-to-date elephant population estimates (from KWS).

Bearing in mind that there are reservations about grouping data from different census methods and that such totals should be used only as rough approximations, the following overall trends can be inferred from Table 1:

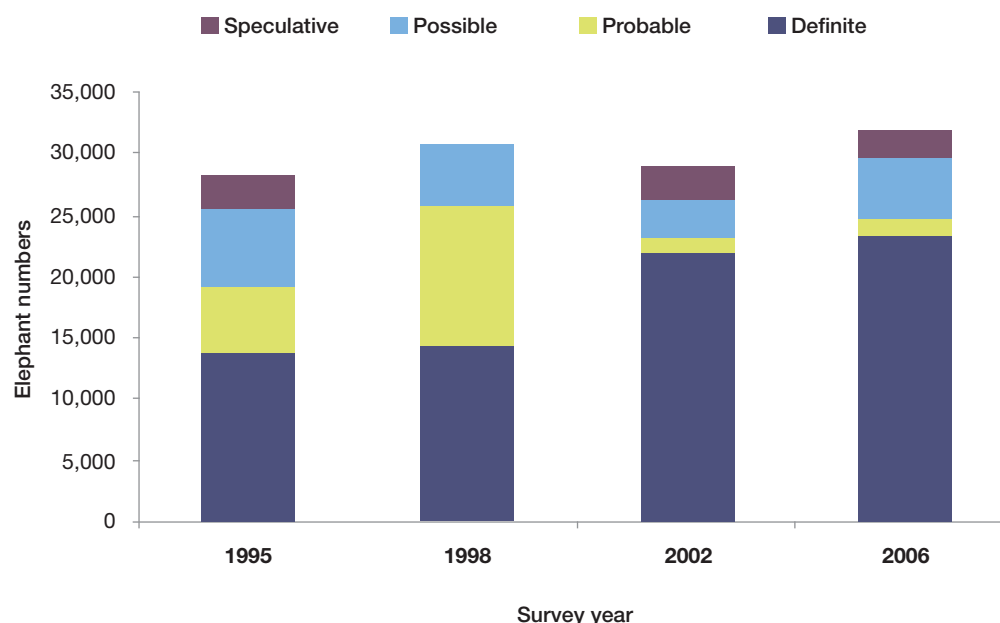
1. Apparent increases in the population totals of Coast¹, Tsavo, Southern and Central Rift Areas. In 2006, these regional totals comprised, respectively, 3%, 35%, 5% and 12% of the national total. Taken together, these four regions comprise roughly 55% of the elephants in Kenya.

2. No clear trends in the population totals of Northern, Mountain and Western Areas. In 2006, these regional totals comprised, respectively, 2%, 41% and 2% of the national total. Taken together, these three regions include roughly 45% of the elephants in Kenya.

The AfESG reports classified estimates collected with different methods according to their different degrees of reliability. Figure 2 summarises the recent national estimates according to reliability in four categories: 'Definite', 'Probable', 'Possible' and 'Speculative'. The categories of 'Probable' and 'Possible' involve the use of confidence intervals in their calculation, so totals from combining different surveys may differ from those of the previous table, which combined central estimates only. Note that there has been a steady increase in the 'Definite' category. This is likely due in part to a genuine increase in numbers, but also to an increase in the proportion of elephant populations being surveyed with improved methods, which reflects well on the quality of survey work being done in Kenya.

¹Coast south of the Tana River has shown an increase.

The north remains poor in population without significant signs of recovery.

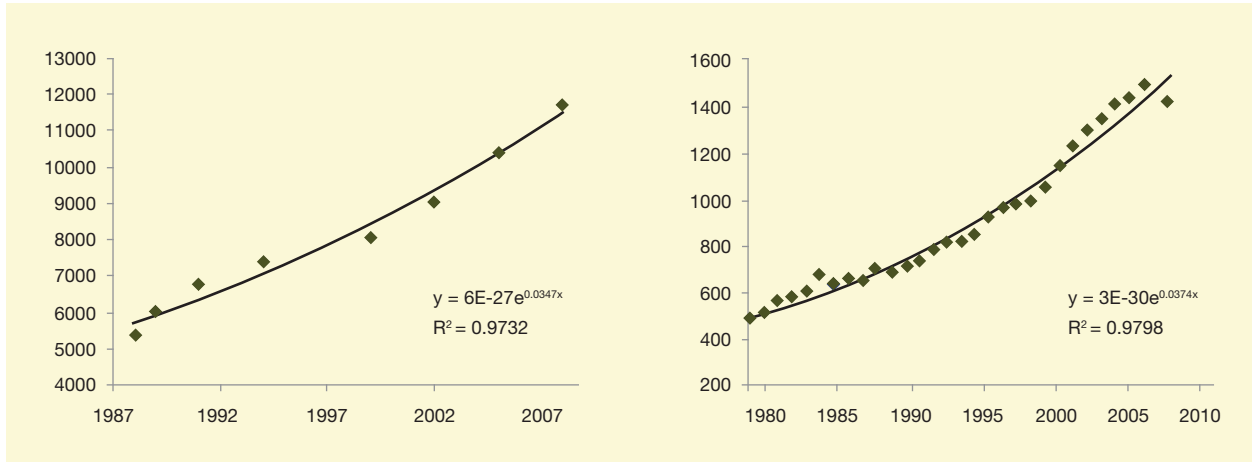


[FIGURE 2] Total estimates for elephant numbers in Kenya in different reliability categories 1995–2006 (AfESG reports). KWS – internal estimates indicate that there are about 35,000 elephants in the country in 2010 (not verified by AfESG at date of publication).

The report prepared for the years 1990 to 2002 by KWS and Save the Elephants (Thouless et al., 2008) is the most recent comprehensive summary of the status of elephants across Kenya, compiling and discussing the available information on numbers and trends in the period following the ivory trade ban of 1989. The previous national level effort was in 1992 (Poole et al., 1992), which described the history of elephants in the country up to that date and documented the dramatic decline in elephant populations across the country. The decline appeared to be brought to a halt with the protection of elephants offered by the formation of an effective management by KWS in 1990 and the CITES ban on the ivory trade.

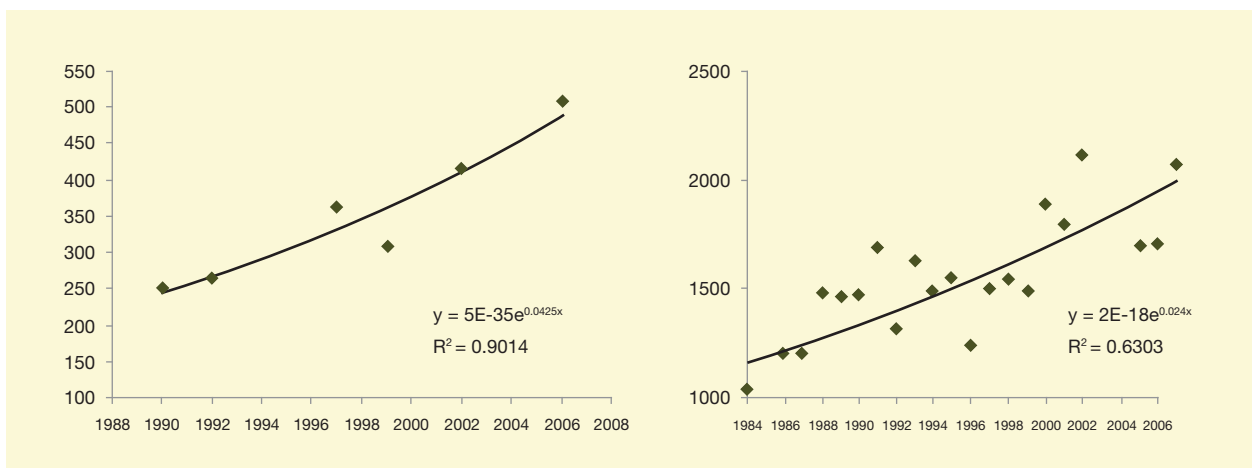
The KWS-STE 2008 report (Thouless et al., 2008) presented survey data and other estimates confirming that the 1990s were the first decade since the 1960s that Kenya's elephants were not in substantial decline. The numbers of elephants in the major savannah populations such as Tsavo, Laikipia-Samburu and Amboseli appeared to be increasing, while others such as Meru and the Mara ecosystem were stable or increasing slightly. The status of forest populations was much less clear within the Mount Kenya and Aberdare highland forests (the largest forest populations), other highland areas in Central Rift or Western regions, and the coastal forests. In contrast to the savannah populations, there is no clear evidence that forest populations were affected by the massive poaching of the 1970–1980s, with some indication that most of these populations are at moderately high densities (more than 1 elephant per km²). However, as a result of continued deforestation, the forest habitat for elephants has been reduced significantly, and it is thus possible – though not reliably established – that forest populations may have been reduced accordingly.

Reliable trend data are available only where time series of good quality estimates are available, and this is the case for a limited number of well-studied populations in Tsavo, Amboseli, Meru, Masai Mara and Samburu / Laikipia. Data from aerial total counts in Tsavo during the period 1988–2008 show a steady annual increase rate of 3.5% (Figure 3). The Amboseli Elephant Research Project (Moss, 2001) has recorded known elephant numbers continuously since the early 1970s and the population has increased at an average annual rate of 3.8% since 1978 (Figure 4).



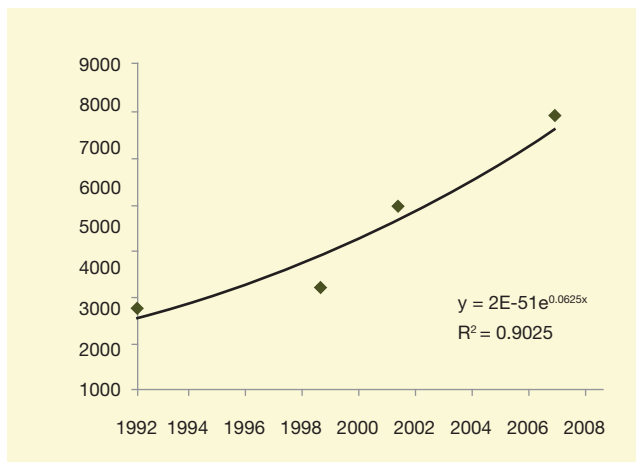
[FIGURE 3] Total counts Tsavo (1988-2008)

[FIGURE 4] Known population Amboseli (1979-2007)



[FIGURE 5] Total counts Meru (1990-2006)

[FIGURE 6] Total counts Mara (1984-2007)

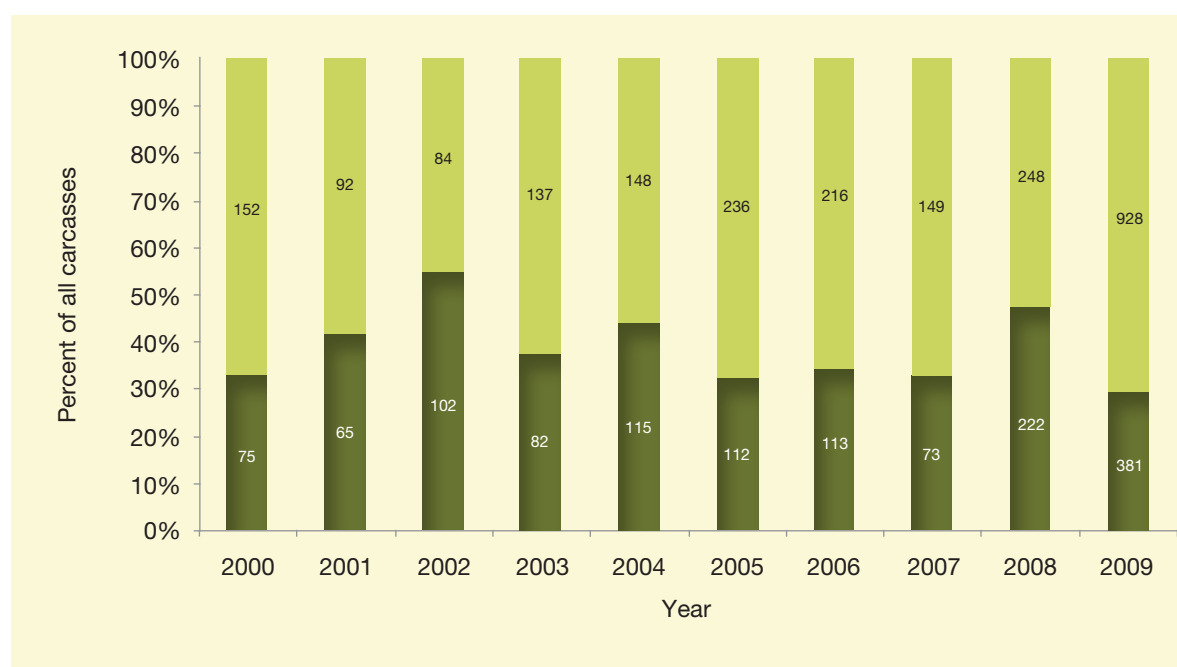


[FIGURE 7] Total counts Samburu/Laikipia (1992-2008)

The small Meru population has been surveyed in aerial total counts from 1990 to 2006 and has shown an annual increase rate of 4.3% (Figure 5) whilst the Masai Mara population has on average grown by 2.4% (Figure 6) and Samburu/Laikipia by an average of 6.25% (Figure 7).

These population trends should not be taken as an indication of the national elephant population; they are simply the only ones with a reasonable time series of good quality data and this selection is likely to be biased towards better protected populations.

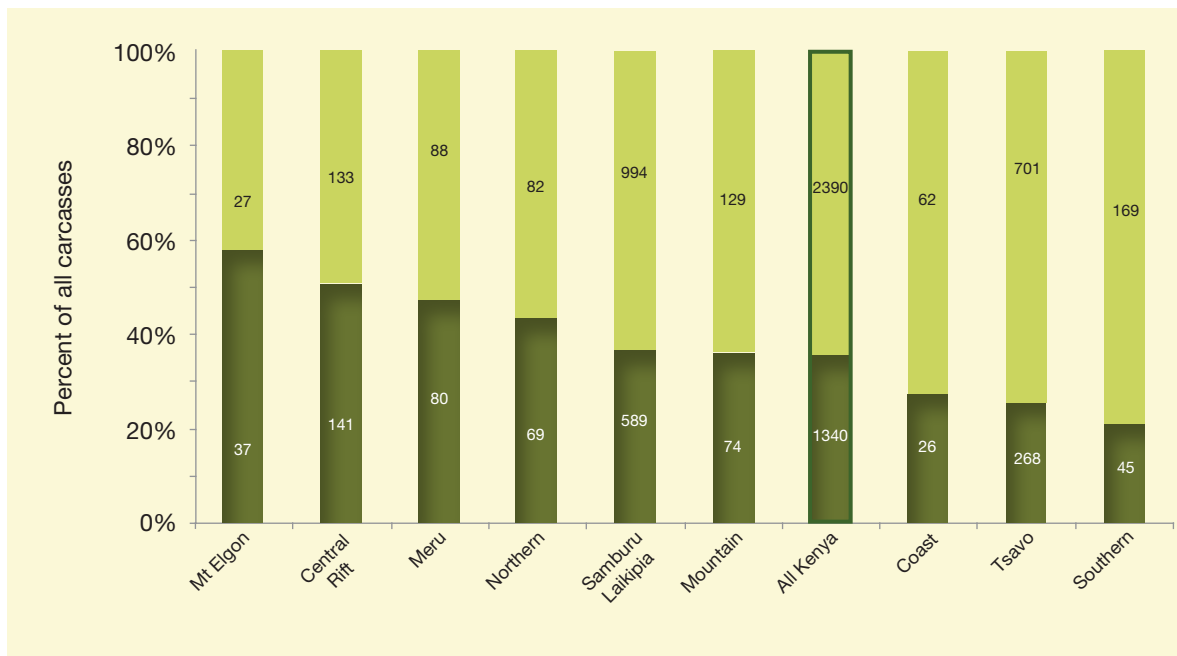
A key factor affecting elephant population status is observed rates of elephant mortality. Therefore, a centralised Elephant Mortality Database was established at KWS headquarters in 1990. The average PIKE value was 35.3% from 1990 to 2002 (Thouless et al., 2008) and has remained high at 35.9% over the period up-to 2009 (Figure 8, Figure 9), with regions with complete dataset (excluding Eastern and Western regions) arranged in rank order of PIKE in Figure 10. The rank ordering of PIKE, is a convenient way of sorting areas with a high level of risk to elephants from illegal killing from those with a low risk, depending on whether they fall above or below the average PIKE value. This separates the populations of Coast (south of Tana river), Tsavo, and Southern, all of which are known to be relatively well protected, from those of Mt. Elgon, Central Rift, Meru, Northern, Samburu-Laikipia and Mountain, all of which were known in the period to be poorly protected or to have high levels of HEC. The major threat to the northern elephant populations is likely to be the large numbers of firearms in the hands of local communities, largely since the breakdown of law and order in Somalia in the early 1990s.



[FIGURE 8] The proportion of illegally killed elephants (PIKE; dark portion of columns) contrasted with other causes of elephant mortality (white portion of columns)



[FIGURE 9] The proportion of illegally killed elephants through poaching (dark portion of columns) contrasted with illegally killed elephants through HEC (white portion of columns).



[FIGURE 10] The proportion of illegally killed elephants (PIKE; dark portion of columns) contrasted with other causes of elephant mortality (white portion of columns) in different regions of Kenya over the period 2000-2009. Western and Eastern regions were excluded as they had incomplete dataset.

1.1.2 Elephant range

Estimating and evaluating the quality of the range of elephant populations is central to their conservation, but faces certain difficulties. The area and configuration of terrain used by African elephants is affected by their search for food and other resources, by the history of the use of the area by people and elephants, and the elephants' own assessment of the disturbance and risk posed by people. Where there are 'hard edges', such as fences or abrupt changes in habitat or land use, e.g. a shift from savannah or forest to farmland, it may be possible to define accurately the boundaries of an elephant population range, often in relation to conflict incidence. In cases where survey areas have been based on the boundaries of PAs, natural landmarks or administrative boundaries, the definition of range is somewhat arbitrary and is not necessarily an accurate assessment of the actual area used, or potentially used, by the population. Defining range is a particular problem in remote areas with low-density populations and or few observers, or in areas where animals may be crossing international borders. It is often difficult to document reductions in elephant range, as people are far more likely to notice when elephants are newly seen in an area, rather than when they have not been seen for a period of time.

Since 2002, AfESG (Blanc et al., 2002) has employed a set of categories to refine the definition of elephant range. These categories include:

Category	Description
Known range	Areas of suitable habitat which, if searched with reasonable intensity, are likely to yield signs of elephant presence. If such presence is absent for a 10-year period, Known range is degraded to Possible range.
Possible range	Areas within historical range and in suitable habitat where there are no negative data to rule out the presence of elephants.
Doubtful range	Areas where there are reasons to believe that elephants are no longer present, but which have not been formally surveyed. If further corroborative evidence is obtained, areas of Doubtful range are re-classified as Non-range .
Non-range	Areas with no elephants, due to habitat conversion or local extinction.
Point records	Sightings or signs of elephants outside of Known range.

For the reasons discussed above, the systematic documenting and monitoring of elephant range has been difficult to achieve in most countries in Africa, and Kenya is no exception. Information on areas of known and possible range, which were surveyed or un-assessed and presented in the AfESG reports since 2002, are presented in Table 3.

Elephant range in km ²	2002			2006		
	Known	Possible	Total	Known	Possible	Total
Surveyed/assessed	86,079	Not available	86,079	79,043	8,889	87,932
Unassessed	15,670	7,318	22,988	12,597	6,584	19,181
Total	101,749	7,318	109,067	91,640	15,473	107,113

[TABLE 3]

Areas of elephant range in Kenya, surveyed/assessed and un-assessed, in Known and Possible Categories (from AfESG reports).

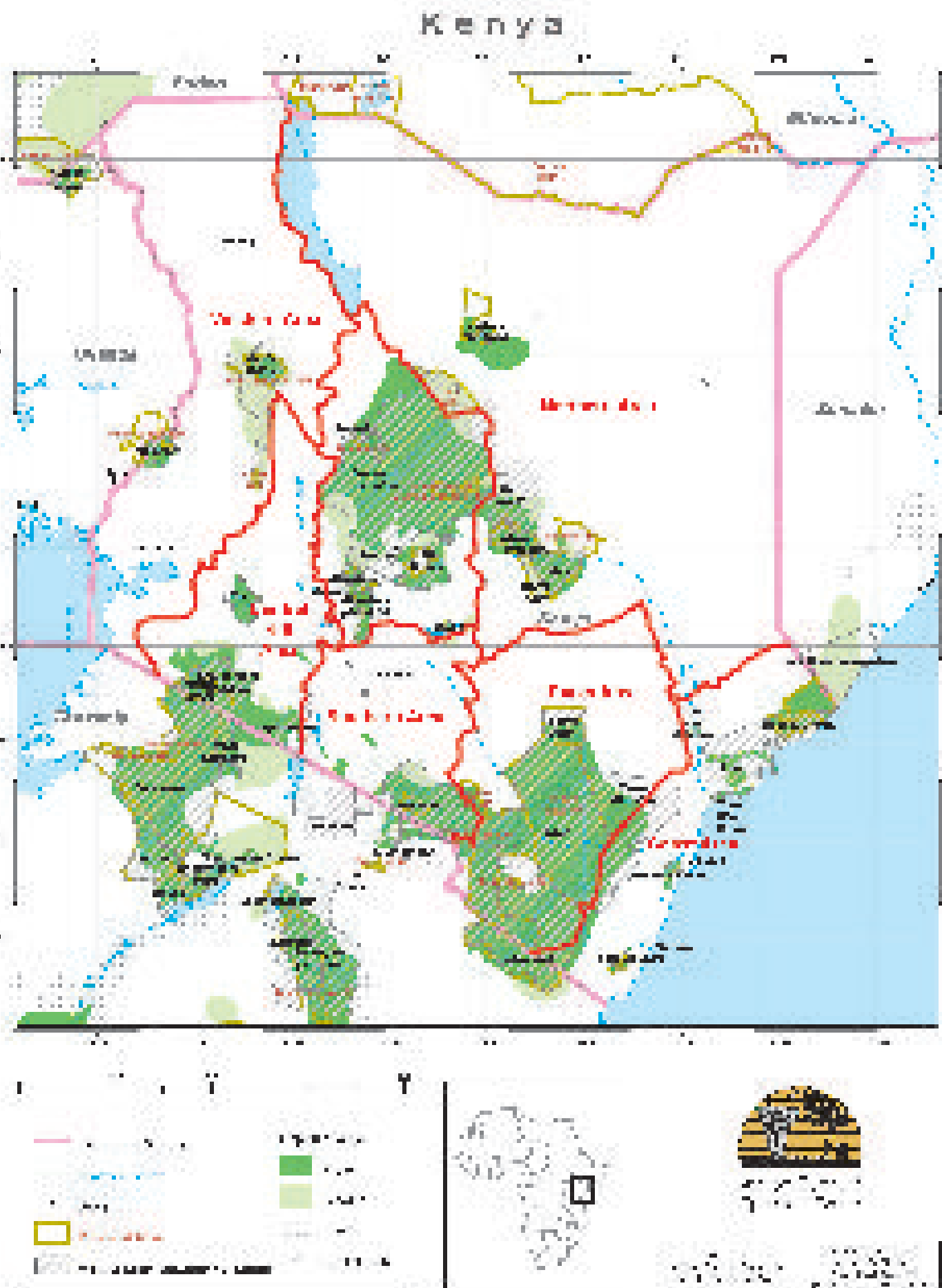
There are several points to note from this presentation of data. The first is that there is in the order of 90,000 – 100,000 km² of known elephant range in Kenya, with an additional 7,000–15,000 km² of possible range. It would appear that there has been a slight decline in the amount of known range in recent years, but it is also possible that this change is due to a better definition of range area rather than a measurable range contraction. The increase in ‘Possible’ range area may be partly due to improved information, and may also reflect the movement of elephants into new areas. Alterations in range between 1925 to 1990 are extensive and reflect the drivers on elephant behaviour in response to threats and habitat change (Parker & Graham, 1989).

A spatial depiction of estimated elephant range as of 2006 is presented in the map from the most recent African Elephant Status Report (Blanc et al., 2007); Figure 11. Several points are clear:

1. There is considerable elephant range outside formal PAs.
2. The main areas of contiguous elephant range are:
 - i. the northern coast
 - ii. the Tsavo-Chyulu-Amboseli-Kilimanjaro complex
 - iii. the Aberdare-Mt Kenya-Laikipia-Samburu-Northern Area complex
 - iv. the Nguruman-Mara-Serengeti complex
 - v. Nasolot-Romoi-Kerio Valley.
3. The range of individual populations in many cases cross boundaries of KWS Conservation Areas, indicating the need for coordination of management.
4. Some population ranges also cross international boundaries, with Tanzania, Uganda and Somalia, with similar implications for coordination of management.

[OPPOSITE - FIGURE 11]

Map of elephant range in Kenya as of 2006, from African Elephant Status Report (*Blanc et al.*, 2007). Boundaries of KWS Conservation Areas have been added.



The 1990-2002 KWS-STE (Thouless et al., 2008) report notes that two processes are resulting in changes to elephant range in Kenya. Firstly, following the improved security and reduced hunting of elephants, elephants appear to be venturing back into areas they had previously occupied. This has been notable from the 1990s onwards, around Amboseli – with elephant movements to the north, westwards towards Namanga, eastwards towards the Chyulus and Tsavo West, and southwards into Tanzania and the West Kilimanjaro basin and further west towards Lakes Natron and Magadi. In Laikipia-Samburu, their movement is extending northwards through Northern Province in the direction of Marsabit, and in the Mara the elephants are venturing towards Transmara in the west and Ngurumans in the east. Elephant sightings were recorded in new areas, such as near Lakes Baringo and Bogoria, and the outskirts of Nairobi. Secondly, at the same time, fragmentation of elephant range and blocking of movement corridors, through changes in land tenure and use is accelerating, as exemplified particularly in the Mount Kenya and Aberdare area and in the former group ranch areas surrounding Amboseli.

In Mwea National Reserve and in the coastal forests of Shimba and Arabuko-Sokoke, human settlement and land use conversion has steadily spread. In the absence of effective action by government or conservation bodies in land use zoning, these areas have become entirely isolated from adjacent natural habitat. This formation of closed enclaves, which is entirely preventable, creates serious management problems for the maintenance of habitat and wildlife diversity.

One aspect of elephant range and habitat monitoring that is not captured by the available data, based simply on total areas, is the degree of connectedness of range areas. A number of small, isolated range patches is clearly not the same as an equivalent area of contiguous habitat. Many of these range patches are still connected by corridors, which are thought to be of crucial ecological importance. The regular collection of more reliable and detailed data on elephant range is clearly a priority for future efforts in Kenya.

1.2 Policies and legislation concerning elephant conservation

Wildlife conservation, as a form of natural resource management, is affected by the policies and legislation in a range of sectors, including inter alia forestry, agriculture, livestock, water, land tenure and planning. There are new policies under development for land and livestock as well. These will not be reviewed specifically here, but should be recognised as having bearing on the conservation of wildlife in general, and of elephants in particular.

1.2.1 Environment policy

The Environmental Management and Coordination Act, 1999

Kenya has a wide variety of environmental legislation, with some 77 statutes governing different aspects of environmental management. This Act of Parliament provides for the establishment of an appropriate legal and institutional framework for coordinating the management of the environment. The Act recognizes the fact that the environment constitutes the foundation of national economic, social, cultural and spiritual advancement and seeks to improve the legal and administrative coordination of diverse sectoral initiatives so as to improve the national capacity for the management of the environment.

Sessional Paper No. 6 on Environment and Development, 1999

The goal of this policy is to harmonise environmental and developmental goals thereby ensuring sustainability. This sessional paper provides comprehensive guidelines and strategies for government action regarding environment and development. With regard to wildlife, the sessional paper re-emphasises the goals of the wildlife policy of 1975. The paper also states the government commitment in the following areas among others:

- Involve local communities and other users in wildlife conservation and management.
- Develop mechanisms that allow communities to benefit from wildlife earnings.
- Harmonise different wildlife development and conservation activities in protected and dispersal areas.
- Establish zones that permit multiple use management of wildlife and assess the status of all vital wildlife habitats in the country.
- Prepare management plans for their conservation and management.

The National Biodiversity Strategy, 2000

The overall objective of the National Biodiversity Strategy and Action Plan (NBSAP) is to address the national and international undertakings elaborated in Article 6 of the Convention on Biological Diversity (CBD). It is a national framework of action for the implementation of the Convention to ensure that the present rate of biodiversity loss is reversed, and the present levels of biological resources are maintained at sustainable levels for posterity. The general objectives of the strategy are to conserve Kenya's biodiversity; to sustainably use its components; to fairly and equitably share the benefits arising from the utilization of biodiversity resources among stakeholders; and to enhance the technical and scientific cooperation nationally and internationally, including the exchange of information in support of biological conservation.

1.2.2 Wildlife policy and legislation

The Wildlife Policy (Sessional Paper No. 3 of 1975)

This is the first, and to present only, policy that has governed wildlife management in Kenya since the 1970s and its goal is 'to optimize the returns from this resource, taking account of returns from other forms of land use'.

The policy includes:

- the primary goal of wildlife conservation as the optimization of returns from wildlife defined broadly to include aesthetic, cultural, scientific and economic gains, taking into account the income from other land uses;
- the need to identify and implement compatible land uses and fair distribution of benefits derived from wildlife including from both non-consumptive and consumptive uses of wildlife;
- the need for an integrated approach to wildlife conservation and management in order to minimize human-wildlife conflicts;
- the responsibility of government for paying compensation for damages caused by wildlife.

The Wildlife (Conservation and Management) Act Cap 376, 1976 Rev. 1985

This Act of Parliament has provided the legal and institutional framework for implementing the 1975 Wildlife Policy, including the protection, conservation and management of wildlife in Kenya and the establishment and management of national parks and national reserves. It unified the two main agencies for conservation, the Game Department (operating outside PAs) and Kenya National Parks (KNP), until then an independent body, into the Wildlife Conservation and Management Department (WCMD). It had the positive effects, at least in its early years, of enhancing wildlife conservation in the country, but from the outset there were concerns that corrupt and/or inefficient elements from the governmental Game Department could reduce the relative effectiveness of the KNP management operations in PAs and beyond.

The Wildlife (Conservation and Management) (Amendment) Act No. 16, 1989

During the 1970s through the late 1980s, the management of wildlife in Kenya deteriorated and poaching reached a crisis level. To reverse this trend, the Government passed the Wildlife Conservation and Management (Amendment) Act (Cap 376 No. 16, 1989, Republic of Kenya). This action had immediate, yet longer lasting effects that:

- established KWS as a parastatal under the Ministry, but with considerable independence of financial and administrative authority, with responsibility for wildlife conservation and management countrywide;
- significantly reduced wildlife poaching especially of endangered species such as elephants and rhinos;
- established the Kenya Wildlife Service Training Institute (KWSTI) that continues to play an important role in capacity development.

KWS Policy Framework and Development Programme 1991–1996

The legislative establishment of KWS was followed in November 1990 by the elaboration of a comprehensive framework of policy and implementation strategies for all parts of the organisation. The published basis for KWS's policy and implementation programme was the set of documents known informally as the 'Zebra Books' and more formally as 'KWS Policy Framework and Development Programme 1991–1996'. As the title indicates, its time-span was intended to be five years, but it was not replaced until 2005 (see below). Its principal goals were described as:

- To conserve the natural environments of Kenya and their fauna and flora, for the benefit of present and future generations and as a world heritage.
- To use the wildlife resources of Kenya sustainably for the economic development of the nation and for the benefit of people living in wildlife areas.
- To protect people and property from injury or damage caused by wildlife.

Its strategy for achieving these goals centred on:

- Wildlife-based economic activity, principally tourism, providing sufficient revenue to pay for the management of the resource. This would be achieved by protecting key species and developing the PA infrastructure and the tourism sector.
- Wildlife assuming a positive role in the lives of rural people sharing the land with wildlife. The approach would be to promote revenue sharing between PAs and their neighbours, direct income generation and wildlife enterprise – including pilot projects for controlled consumptive use, coordinated land use planning and education.
- A rationally planned, ecologically representative network of conservation areas.

Capacity development for wildlife management, sound administration and financial sustainability were seen as the cornerstones of the Policy and Development Framework.

KWS Strategic Plan 2005–2010

Since the time of the Zebra Books in the early 1990s, there were a number of attempts to develop new strategic plans, but the commitment to implement the plans was lacking. In 2005, the KWS board and management took the initiative of preparing, through a consultative process, the strategic plan, which was then duly adopted and set into motion. It is the basis for planning and action for the period 2005–2010 and has as its strategic goal 'to sustainably manage wildlife resources for the benefit of the people of Kenya and as a world heritage'. Its strategic objectives include:

- Achieve policy, legal and regulatory framework and stability to effectively discharge the mandate.
- Enhance wildlife conservation, protection and management.
- Strengthen institutional capacity.
- Improve KWS's recognition, linkages and relationships with stakeholders.
- Ensure full implementation of the strategic plan.

Each of these strategy areas is accompanied by activities and measurable indicators, with a performance monitoring system in place. This strategic plan has largely been successfully implemented ahead of 2010 and as a result a revised strategic plan has been developed and currently being implemented (2008 - 2012).

KWS Strategic Plan 2008–2012

The Strategic Plan for 2005-2010 focused on science for wildlife management, information for institutional development, and marketing for financial management. Accomplishing its goals meant reorganising KWS for efficiency and effectiveness.

The Strategic Plan for 2008-2012 builds on this progress. The goals of the previous Plan were achieved before 2010 hence it was necessary for a new Plan to be put in place. It also enabled the Strategic development process to be synchronised with existing planning cycles as well as national goals of Vision 2030. The KWS 2008-2012 Strategic Plan focuses on the following:

- Strengthening and modernizing institutional capacity.
- Enhancing quality service delivery.
- Enhancing financial sustainability particularly through increasing tourism income.
- Enhancing Wildlife Conservation.
- Customer/Stakeholder Partnerships.

The Plan therefore provides firm anchorage for Kenya's elephant strategy.

Ministry of Tourism and Wildlife, Draft Wildlife Policy, 2007 and The Wildlife (Conservation and Management) Bill, 2007

In the period following the wildlife legislation and policy establishment of the 1970s to early 1990s there have been several social trends, including a significant change in political governance, that have raised the need and impetus for a new, comprehensive wildlife policy and law. There has been a rapid change of tenure and land use in wildlife rangelands from communal to private ownership, associated land subdivision, fencing and conversion for other uses, particularly agriculture, infrastructure and urban development. These changes have been accompanied by increased human-wildlife conflict (HWC) with inadequate compensation for economic losses, and by a marked decline in wildlife numbers and loss of biodiversity. In addition, perverse economic incentives, especially in the agricultural sector, adversely affect wildlife conservation and management initiatives. There is a need to harmonise wildlife policy and law with those of other sectors, including the environmental law framework (the Environment Management and Coordination Act (1999)), other initiatives such as Vision 2030 (the national development blueprint covering the period 2008 to 2030), and relevant international and regional wildlife related conventions and treaties.

In 2006, a process was begun to develop a new framework. Still under discussion and development, this policy and bill have as their central theme the principle of subsidiarity or devolution of responsibility and authority for wildlife management to the lowest level possible and to involve as fully as possible the private sector, non-governmental organizations (NGOs), community-based organisations (CBOs) and other non-state actors. Conservation of ecosystems and ecological processes, rather than a primary focus on protected areas (PAs) as collections of wildlife species, is a central theme. The principles of sustainable use alongside the precautionary principle are seen as important in wildlife conservation.

1.2.3 Elephant conservation policy

KWS Policy Framework and Development Programme 1991–1996

Annex 7B Elephant Conservation and Management

The key source document on policy for elephant conservation was developed as part of the Zebra Books, and formed its Annex 7B. Policies developed for elephant conservation under this five-year plan remain in effect to this day. Even the revised KWS Strategy of 2005 has not re-examined the policy issues around elephant management. The key policies are:

- International ivory trade – Kenya will continue to support the international ban on commercial trade in ivory and will cooperate with other countries to ensure that the African elephant remains on Appendix 1 of CITES.
- Poaching and illegal trade – KWS will increase its intelligence-gathering expertise and will cooperate with neighbouring countries and with the regional TRAFFIC office to identify poachers and illegal ivory dealers and build a database of their activities.
- Monitoring status and trends – KWS will continue to monitor the status and trends of elephant populations, particularly those that have been identified as priority populations and involve other stakeholders in the conservation and scientific sector as much as possible.
- Compression and habitat destruction in small enclosed areas. Some of the smaller areas with isolated elephant populations may need to be regulated. KWS prefers to investigate the feasibility of elephant contraception, as it considers the culling of elephants to be undesirable for several reasons:
 - ethical considerations;
 - the disturbance effect on survivors and its negative consequences for tourism;
 - the destabilising effect on populations dynamics; and
 - the negative press coverage, which Kenya cannot, at this stage, afford.
- Prevention of crop damage – Methods to reduce damage to life and property would include barriers and control shooting – directed at specific problem animals or to affect behaviour. A trained wildlife control team would be sent to problem areas.
- Stimulating tourism – Some elephant projects will be focussed in PAs that are targeted for tourism development.

1.2.4 International frameworks addressing the conservation and management of the African elephant

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), also called the Washington Convention, and the Convention on Conservation of Migratory Species of Wild Animals (CMS), also known as the Bonn Convention, are some of the international legal frameworks applied in conservation and management of the African Elephant. CITES, an agreement between governments, recognizes that international cooperation is essential for the protection of certain species of wild fauna and flora against over-exploitation through international trade, while CMS aims at conserving terrestrial, marine and avian migratory species throughout their range. Kenya is signatory to CITES and the CMS.

As international legal frameworks, CITES and CMS operate within common procedural mechanisms for the effective regulation of international trade in listed species and for the conservation of migratory species respectively. In the case of species that are threatened with extinction, Signatory Governments/Parties strive towards strictly protecting the animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them.

Kenya's population of African elephant is listed in Appendix I of CITES and Appendix II of CMS. Under CITES Appendix I, species are threatened with extinction, which are or may be affected by trade while Under Appendix II of the CMS species are migratory that need, or would significantly benefit from, international cooperation.

Kenya Wildlife Service is mandated under Section 3A J. of the Wildlife Act to be the lead agency for the implementation of the Conventions as guided by the Act and other provisions such as the Sessional Paper No.3 of 1975 Policy on future wildlife management of Kenya; Revocation of wildlife hunting (1977); Revocation of dealership in wildlife products (1978); EMCA (1999); Forest Act CAP 385; Fisheries Act cap 378 and other biodiversity related Conventions, Treaties, Protocols and Agreements.

The National Elephant Strategy has been developed reflecting on the provisions of CITES and CMS as key international legal frameworks that cover conservation and management of the African elephant nationally and globally and by which Kenya has committed to abide.

[LEFT] Plate 19.

Elephants being translocated from Ngulia Rhino Sanctuary into the wider Tsavo West National Park. On the back is the identification number to assist in post release monitoring - Richard Kock



2. The strategic document

BACKGROUND

During the period 1991–1996, the priority for elephant conservation was to establish firmly the protection of elephants following the devastation of their numbers during the previous two decades, and to initiate efforts to secure elephant range through improved relations with local communities who shared their habitat.

The subsequent period, to the present day, has been one of consolidation, albeit with a series of changes in KWS management, and more recently a period of stability, with renewal in 2005 of KWS administrative structures. The protection of elephants from illegal hunting for ivory since the early 1990s has been largely successful, and numbers have increased from about 20,000 in 1990 (Joyce Poole, pers. comm., 2010) to over 35,000 today (Table 2). Efforts that were initiated to maintain elephant range through the control of conflict have also made progress within their specific terms of approach. Barriers were built under a support programme funded by the European Union (EU) and engagement with communities has been established. A number of programmes have been developed in collaborative partnerships between KWS and NGOs and CBOs. However, land use planning has not been advanced and habitat fragmentation has accelerated in areas, particularly in the vicinity of Laikipia, Amboseli, Narok and Trans-Mara resulting in increased HEC. Certain populations that had been identified as at risk from land use conversion – Shimba Hills, Arabuko Sokoke, Mwea – have now been encircled and enclosed, increasing the urgency of interventive management to control local density and habitat impacts. For management of habitat impacts, the action of choice in the 1991–1996 KWS Policy Framework and Development Programme was contraception, which was not effective in early trials and is currently only viable in discrete, closely monitored and constrained populations (e.g. captive environments such as zoos). This requires further testing to determine its usefulness before considering implementation on a wider scale. Instead, translocation methods have been successfully developed and refined, involving the movement of elephants from a number of locations including Mwea and Shimba Hills, both to Tsavo East and from Laikipia to Meru, and internal relocations from sanctuaries such as Ngulia Sanctuary to the larger PAs.

The 1991–1996 KWS Policy Framework and Development Programme contained the first strategic plan targeted at elephant management in Kenya and it has remained the only such plan from 1990 to present. While it was ground-breaking in identifying priorities and strategies, and it initiated very positive actions, it did not set measurable targets and, thus, progress cannot be assessed. Policies for elephant management today remain unchanged even in the revised draft Wildlife Policy.

[RIGHT] Plate 20.

Adult female and calves at Tsavo East National Park. Apprehensive of human presence probably due to past poaching experiences - Charles Ooro, Kenya Wildlife Service



2.1 Formulation process of this strategic document

This Elephant Conservation and Management Strategy provides a new framework guiding elephant conservation and management for the next ten years. The formulation of this strategy involved the following process:

1. Review of 1991–1996 KWS Policy Framework and Development Programme (Annex 7B Elephant Conservation and Management) and other background documentation.
2. A series of consultative workshops in all eight KWS Conservation Areas/Regions, with stakeholders invited from a range of backgrounds to assess opinions and priorities.
3. A questionnaire circulated by email to key individuals, conservation NGOs and other groups with interests in elephant management in Kenya to provide input into strategy development.
4. Collation of stakeholder views and the review of documents, combined in a briefing document for the National Stakeholder Strategy Workshop.
5. The National Stakeholder Workshop held at Mpala Research Centre finalising development of the strategy. The stakeholders included neighbouring representatives who contributed and assisted in harmonising or highlighting cross border policy issues where appropriate.
6. Neighbouring country representatives were invited and attendees contributed and assisted in harmonising or highlighting cross-border policy issues where appropriate.
7. Circulation of draft strategy document for written comments by stakeholders including those who could not attend the workshops.

2.1.1 Results of the stakeholder consultations

The stakeholder consultations identified a number of key issues:

1. *Cultural and ethical values*

There remains in Kenya a significant cultural and ethical component in peoples' attitudes towards elephants, with respect for their intrinsic qualities and a preference by many stakeholders for a minimum of disturbance in their management. However, there is a strong concern that HEC over land and resources, if not addressed effectively and promptly at all necessary levels, is likely to lead to an increasing erosion of this goodwill.

2. *Elephant protection*

It is commonly agreed that Kenya's elephants have benefited, and continue to benefit from the protection afforded by the ban in legal trade in ivory and the improved capacity of KWS in anti-poaching activities. However, it is recognised that the threat from the illegal trade still exists and anti-poaching effectiveness must be maintained and strengthened where needed. Kenya considers ivory trade as the key factor driving illegal killing of elephants in the absence of effective international controls, and the current policy is for a trade ban to remain in place.

The expansion of elephant populations into areas of former range in several parts of the country, the even greater expansion of human populations into elephant range, the political instability in neighbouring countries (particularly Somalia) and the growing take-up of elephant monitoring and protection activities by community-level groups all point to the need to review the lessons learned over the past 15 years. A prioritised, strategic approach will be needed to deploy forces efficiently taking cognisance of emerging technologies like satellite tracking of elephants, and to work effectively with local stakeholders, with no single approach applicable in all areas of the country. International coordination is also seen as essential for elephant protection.

3. Management of the role of elephants in ecosystems

While some felt that research should define a 'carrying capacity', or single target figure for population size, most recognised that elephants need to move through landscapes and that problems are caused when they are confined. The concept of a "correct number" of animals is now recognised as having limited value in elephant management (Caughley, 1976; du Toit et al., 2003; Lindsay, 1993; Owen-Smith et al., 2006). The approach should be to manage their relationship with habitats through allowing dispersal, largely by encouraging communities to accept co-existence and through developing means to mitigate adverse impacts on human security and livelihoods. In the case of enclosed populations, some favoured translocation, but were concerned about the expense and the disturbance. Others felt that contraception might work, but that it is still an unproven technique and is also intrusive. A significant number felt that in small populations with no future, the elephants should be removed entirely, though others felt that this was too drastic.

4. Habitat loss and fragmentation

It is generally recognised that elephants should not be confined inside small areas, as they will, sooner or later, dramatically modify the available resources. While some stakeholders suggested that resources such as waterpoints should be provided within PAs to keep elephants within them, most agreed that elephants should be allowed to move outside PAs, with buffer zones and corridors kept free of incompatible land use practices. This securing of habitat linkage must involve extensive work with communities and landowners, both to gain their agreement and to protect their livelihoods. Land use planning is an unavoidable component, if not indeed a prerequisite, for successful maintenance of a human-elephant landscape and must be undertaken at all levels, in a 'vertical integration' approach. Efforts should be made to harmonise the policies of different government ministries, so that conservation is taken seriously and does not conflict with other directives.

5. Human-elephant conflict / coexistence

There is a great deal of attention focused on conflict between people and wildlife in general, and people and elephants in particular, with high, and growing, incidence in several areas of the country. With statements made by politicians and extensive media coverage, there is a need for accurate verification of the scale of elephant crop failure (and property damage) in relation to other factors causing crop failure, such as impact by other species including rodents, birds and insects and the effects of drought or flooding. Methods for mitigating conflict include: better land use planning, electric fencing, farm-based early warning and deterrence methods, and 'control' shooting; no single method works in all cases, but it is important that practitioners are well-trained and responsive. Compensation or consolation schemes are seen as important for the livelihoods and goodwill of affected families, but are prone to inefficiency and capitalisation problems, and also are reactive and not preventive. When land use planning policy is implemented, it shall act as a preventive and a long-term solution to the HEC. Insurance funds contributed by the government, commercial tourism operators, NGOs and or local stakeholders are seen as a way to provide finance and, literally, buy-in to the process. Devolution of rights and responsibilities to communities and landowners for protecting their property is seen as crucial to any successful approach.

6. Elephant contribution to local livelihoods

Livelihood benefits linked to conservation of elephant habitat are seen as important for creating and maintaining the appreciation and valuation of elephants, and offsetting opportunity costs of alternate land uses. These potential benefits fall into two main areas: sharing of PA revenues with local landowners and direct revenue generation by communities and landowners themselves. Revenue sharing from PAs has the advantage of linking them to surrounding land use, but per capita returns to landowners are likely to be small, suffer from problems of transparency, could be perceived as a 'handout' and, it is felt, should go directly to communities rather than through county councils to avoid political interference.

Generation of revenue by landowners through community-based natural resource management (CBNRM) and elephant-friendly land use initiatives is seen as more sustainable and directly empowering, allowing individuals and groups to control their level of responsibility, investment and return. Non-consumptive, essentially ecotourism-related, activities are the only initiatives possible under the current policy. Sources of income could include employment by lodges, partnerships between commercial operators and landowners (leases, employment, joint ventures), community-operated conservancies or camps and cultural tourism. Tourism operations must conform to zoning and planning and not damage the resource or relations with local landowners. Other sources of support include NGOs, which offer the possibility of training, employment and the ability to leverage funding and innovative revenue sources such as trust funds with international and local donors, foundations and Payment for Ecosystem Services (PES) schemes. Cross-sector and in-kind benefits in the fields of education (schools, bursaries) and infrastructure (clinics, roads) linked to elephant conservation should also be supported.

7. Roles / responsibilities of stakeholders

KWS is recognised as having the mandate for elephant management, identifying priorities in consultative processes and having the responsibility to support stakeholders at all levels, empowering landowners and harmonising the activities of other national and international governmental agencies. People expect KWS to support community initiatives, provide security from poachers and HEC and maintain partnerships with CBOs and community wildlife associations, NGOs and other government departments. Landowners are seen to play a crucial role in maintaining elephant habitat, and there is strong need for their enhanced and well-defined decision-making rights. At the same time, landowners also have responsibilities for conservation of elephant populations and habitats and cooperation with KWS. Other government departments should harmonise with KWS, recognising conservation as a legitimate land use and 'mainstream' conservation in their operations, including conservation education in school curricula. NGOs and private sector should assist with fund-raising, training and the promotion of open, honest dialogue, linking national and international conservation best practice with community development.

8. International issues

There are three key trans-frontier populations along the border with Tanzania, with small populations adjacent to Uganda in the west, and Ethiopia and particularly Somalia in the north. There should be regular consultation on the prospects for harmonisation of management strategies between Kenya and its neighbours, with the possibility of an East African regional elephant strategy. Where there is not full agreement on policies and strategies, there should be 'buffer zones' in border regions where divergent approaches with potentially adverse cross-boundary effects are avoided. Coordinated approaches should be pursued on, inter alia, protection and law enforcement, trade issues, range expansion and maintenance, HEC, CBNRM initiatives, elephant research and monitoring. National enactment of international agreements should be promoted. Inter-governmental organisations should promote more inter-regional dialogue and collaboration.

9. Capacity building

There is a perceived need for strengthening KWS capacity, particularly in the social development sector (for training and communicating with landowners and community organisations on elephant management and monitoring, CBNRM), Problem Animal Control (PAC) and HEC mitigation, fencing, monitoring and research. Regular re-training of staff at all levels would maintain competence and update skill levels with emerging techniques. Landowners and especially communities need training in small business and conservancy management, fund raising, financial management, project management, monitoring and evaluation, fence management, HEC mitigation, anti-poaching and good governance. As noted, KWS could provide a lot of this training, working particularly with community game scouts and assisting with equipment. Exchange visits should be arranged for community members on learning visits to other areas in Kenya, or in other countries with successful programmes. Other government ministries need to mainstream conservation issues in their programmes.

2.1.2 Results of threat and vulnerability analyses

The analyses are summarised below and is compiled from the outputs of the stakeholder consultation and final strategy workshops, published literature, KWS internal reports and reviewer's inputs.

2.1.2.1 Security and ivory trade



[FIGURE 12]

Plate 21.

Recovered ivory by
Kenya Wildlife Service
armed wing - Charles Ooro,
Kenya Wildlife Service

The greatest threat to the elephant remains its ivory!

The introduction of a ban on ivory sales worldwide in 1989, as a result of massive elephant population declines in Africa and Asia, was heavily influenced by world opinion and, coincidentally, policy developing in Kenya at the time. This was also linked to the inception of KWS and the burning of ivory stockpiles in Nairobi NP which provided the statement which reverberated around the world. The benefits were felt within a short time: illegal ivory trade declined, craftsman and their shops became redundant, black-market prices of ivory plummeted and poaching declined across the range States. Elephant in Kenya benefited from this single event. However recovery would not have been possible without the improvements in security achieved through the establishment of the KWS armed wing and the elephant programme. The result, which Kenya is proud of, is a near doubling of the population. Nevertheless, this recovery has led to further challenges as Kenya develops and land use spreads further into elephant range with increasing HEC and alteration of habitat through restriction of elephant populations into secure areas.

Although the ban remains, down-listing of four southern African elephant populations to CITES Appendix II, and two one-off legal sales of ivory have occurred. Today, demand for ivory has once again increased, causing further major declines of fragile populations in West and Central Africa and placing increasing pressure on East and Southern African populations of elephants. In Kenya, a strategy is required to deal with these events and to support the wider implementation of the African Elephant Action Plan (Anon., 2010). The conservation of elephants still needs to rely heavily on continued but, more importantly, expanded security to allow elephant populations to reoccupy areas of former range where there are few people and thus enable movement of animals away from conflict hotspots. However, security alone is insufficient. Greater cooperation with communities that co-exist currently or live in potential range and with other sectors impinging on land use and management locally, nationally, regionally and internationally is needed. The strategy also needs to focus on reducing demand for and supply chains for ivory. The added benefit of increased range will be protection of other wildlife and habitat. Overall, this will increase the resilience of Kenya's valuable natural ecosystems vital to long-term sustainable economic development.

Threat	Cause	Constraint	Preconditions / Assumption (enabling conditions / environment to reduce threats)
Poaching / illegal killing	Lack of awareness of value of elephants	Limited environmental education	- Political stability in the region. - CITES will not reopen ivory trade - Political will - International collaboration in law enforcement
	Inadequate law enforcement effort	- Diplomatic immunity - Lack of enforcement capacity - Weak legislation and poor enforcement	
	Human-elephant conflict	- Limited capacity to mitigate conflicts - Conflicting land use planning / practices	
	Proliferation of illegal firearms	Instability in neighbouring countries	
	Increased demand for wildlife meat	Lack of alternative livelihoods/poverty	
	Cultural practices – some cultures allow killing of an animal e.g. killing of a lion by the Maasai community to prove their bravery etc.	Low literacy levels	
	Increased demand and price of ivory	Availability of illegal market	
	Ineffective cross-border collaboration	- Conflicting policy / laws (national and international) - Lack of political will	
Degrading / declining habitat	Deforestation / logging / charcoal	Conflicting sectoral policy / laws	- Negative climate change impacts / droughts are not severe in the coming years - No negative changes in legislation - Political good will
	Uncontrolled fires	Insufficient promotion of renewable energy sources	
	Encroachment by people and livestock	Inadequate enforcement capacity / effort	
	Lack of alternative livelihoods	Inadequate enforcement of policy / laws	
	Increased human population, settlements and agricultural expansion especially into drylands e.g. biofuels	- Political interference - Lack of population control measures, policies and actions - Incompatible land use practices and land use planning/zoning - Human population growth	

[TABLE 4] Threat categories - poaching/illegal killing and habitat degradation.

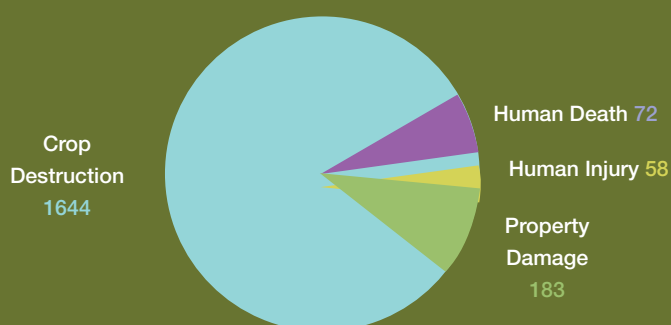
2.1.2.2 Human-Elephant Conflict

The rapid human population growth and settlement encroaching on habitat suitable for elephants has led to conflict but equally elephants have sought security which humanity provides, compounding the problem.

The massive decline of elephants in the 1970s was a tragedy but population recovery has coincided with changes in land use and rapid growth in human populations. The modest recovery from 20,000 to ~35,000 animals has brought with it a rising number of serious challenges as human injury, deaths and crop damage from elephants rise year on year.

Figure 13 shows human-wildlife conflict hot spots in Kenya. The type of conflict commonly experienced include: human death and injury, crop destruction and property damage (Figure 14), with the elephant being the most significant conflict mammal compared to others (Figure 15 and 16).

The cause for this is complex. Not only has development and population growth encroached on suitable elephant habitat, but the improved security, often in areas close to human densities, has encouraged elephants to gather away from the poacher's gun. Therefore, a core objective of the new strategy must be to improve the distribution of elephants across its original range, thereby reducing densities in human dominated landscapes and restoring a more natural balance. This is very ambitious but with political support and community buy-in this will not only reduce HEC but will increase opportunities for nature based tourism in remoter areas of Kenya where the poorest of people live and can potentially benefit from increased livelihood opportunities. The restoration of natural ecological processes of which elephants are critical will also help to restore rangelands, which have become encroached, and in land that has little or no potential for crop agriculture, conserve traditional nomadic peoples, their livestock and their culture.



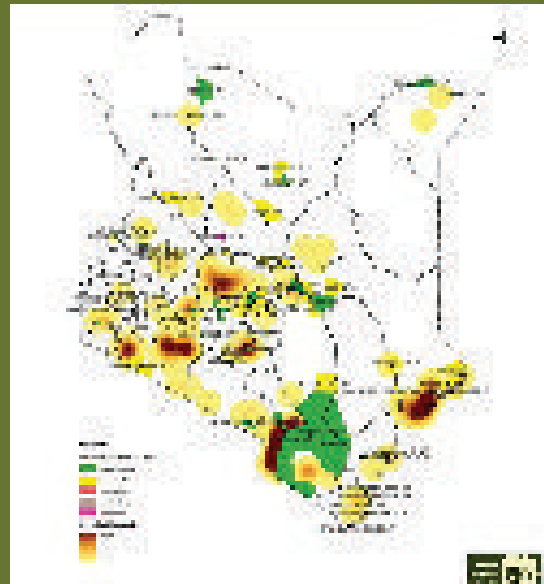
[FIGURE 14]

The elephant is the most significant conflict species in Kenya and causes the greatest number of conflict cases.



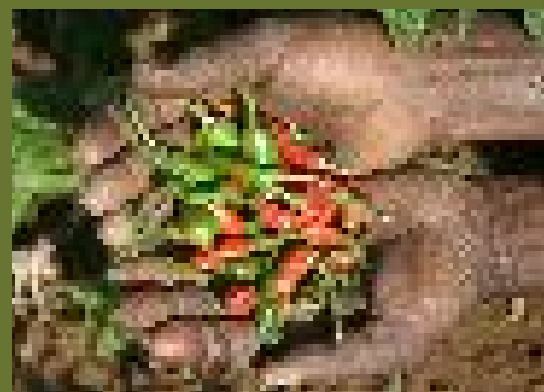
[FIGURE 15 - ABOVE] Plate 22.

Protective and productive Beehive Fences
- Lucy King, Save the Elephants.



[FIGURE 13] Plate 23.

Mapping Human Wildlife Conflict Hotspots in Kenya.



[FIGURE 16 - ABOVE] Plate 24.

Chilli based elephant deterrent trials.

Threat	Cause	Constraint	Preconditions / Assumptions (enabling conditions / environment to reduce threats)
Habitat fragmentation	Increased human demand for land	- Negative politics - Increasing human population	Political stability locally, nationally and regionally
	Increased development of dryland crop agriculture	- High poverty level - Population explosion	
	Increased road construction - Inadequate / conflicting policies	Dependency on road transport supply systems	
Loss of corridors and buffer zones	Population explosion and expansion	High human population growth rate	Low or stabilising human population growth
	Disregard by lack of understanding / respect of elephant ecological needs	- Poverty and dependency on agriculture, lack of resources for education and development of alternative livelihoods - No legal protection of corridors	Greater investment in elephant friendly development and community awareness and engagement programmes around PAs, in dispersal areas and in corridors
Inappropriate land use policy and practice	Inappropriate land use and conflicting sectoral laws	- No legal protection for corridor, dispersal areas and migratory routes; conflicting policy from different land use sectors - Lack of Government recognition of wildlife as a form of land use - Lack of cross-sectoral collaboration - Lack of use of range data available on databases to assist in land use planning.	- Enabling legislation - Community and political buy-in - Cross-sectoral collaboration and planning (harmonisation of conflicting sectoral policies on land use) - Category range data (AfESG database) - Government recognition of elephant and other wildlife conservation as a form of land use
	Competition for forage and water	Lack of policy and practice on equitable management of resources	Fair distribution of available natural resources
	Lack of foresight	Lack of coordinated land-use planning compatible with wildlife	New policies for elephant / wildlife-friendly land use initiatives
	Inadequate integrated planning and lack of resources to implement effective mitigation measures	Information gap and inadequate coordination between relevant stakeholders	Greater coordination between stakeholders to develop site-specific mitigation measures and compensation/consolation/insurance schemes

[TABLE 5] Threat categories - habitat loss, fragmentation, encroachment, poor land use policy, negative attitudes, climate uncertainty, insecurity and inadequate resources.

Threat	Cause	Constraint	Preconditions / Assumptions (enabling conditions / environment to reduce threats)
	Inadequate integrated planning and lack of resources to implement effective mitigation measures	Information gap and inadequate coordination between relevant stakeholders	
Negative attitudes towards elephants	Conflict through contact and coexistence without adequate mitigation measures in place	Lack of alternative means of mitigating the conflict	Sufficient resources to counter negative attitudes and creating positive engagement
	Change in land use patterns to agriculture and other elephant attractants	- Lack of understanding about drivers of elephant conflict from land use change - Lack of law enforcement	
	Inadequate benefits, compensation or insurance planning for injury or damage	No finance compensation, insurance mechanism or realisation of benefits from elephants	
Increasing demand on dryland agriculture e.g. <i>Jatropha</i> , mechanised transport, energy, forage and water	Development and increasing human population growth and activity	Poverty and lack of political commitment	- Effective land-use policy - Human population growth control
	Changing lifestyles e.g. settlement of nomads	Inadequate use of indigenous knowledge and lack of respect by government and development agencies for traditional land use systems and peoples	
Insecurity	Regional and national conflict, lack of cross-border cooperation and policy harmonisation	Weak governance and lack of confidence and respect in security forces; lack of adequate resources and trained forces	- Conflict resolution, economic growth and stable population - Improved and respected security forces, gun control
	Poverty	Inadequate planning and delivery of development initiatives	
	Population growth	Lack of population control, policies and actions	
	Proliferation and misuse of firearms	Lack of confidence and respect in security forces, availability	
Inadequate human, material, technical and financial resources	Inadequate financial and resource commitment from Government, donors and communities	Cross-sectoral demands and priorities	Political will, nationally and internationally, to commit sufficient resources to innovative programmes

[TABLE 5 Cont...] Threat categories - habitat loss, fragmentation, encroachment, poor land use policy, negative attitudes, climate uncertainty, insecurity and inadequate resources.

2.1.2.3 Ecology and Socio-economics

Elephants are critical to sustaining a functional ecosystem in the drylands of Kenya and are an essential draw for tourism.

The importance of elephants in sustaining the functionality of these ecosystems cannot be understated, and the decline of elephants in the latter half of the 20th century has seen a major shift in vegetation from grassland to bushland and scrubland in much of their former range. This has led to a decline in livestock numbers and increased poverty as a result of poor livestock returns. The natural, renewable resource-based, economy of the rangelands is undervalued in the national statistics, and the communities have largely been marginalised politically and remain outside mainstream development, particularly in education and health care. Since climate change has emerged as a major threat to biodiversity and intensive livestock systems are considered a contributory factor to this, open nomadic rangeland is being considered as a more sustainable production system with lower impacts. This will provide incentives in future for conserving these ecosystems.



[TOP] Plate 25.

Group of elephants in the Tsavo ecosystem
– Charles Ooro, Kenya Wildlife Service

Elephants through their cyclical stimulus assist woody plant regeneration, through heavy browsing. They promote seed dispersal through dung - essential for maintaining forest plant diversity. Seeds of some tree species are dependent on elephant digestion for germination. Thus the expansion of elephant distribution, especially in the northern rangelands, will provide important opportunities for simultaneously conserving biodiversity and reducing vulnerability to ecosystem degradation. The contribution of elephants to achieving overarching national biodiversity conservation objectives can be considerable. Kenya is a leader in tourism in Africa and its presence is often quoted as the saviour of wildlife but the true facts are that this economic sector fails to fully translate the potential socioeconomic benefits and share them equitably, and this is a concern. It is ironic that the poorest communities in Kenya are those living with wildlife when the contribution of tourism to GDP in the country is so large (63%) amounting to approximately 60 billion ksh a year and providing the bulk of the country's foreign exchange. Local communities that co-exist with elephants are forced to seek livelihoods based mainly on livestock and subsistence agriculture, or to poach the animals as a source of supplementary protein or cash through sale of products. The centralisation of tourism revenue and the scramble for locations for lodges in key sites, like in Samburu, Amboseli and Mara, increases pressure on elephants, reducing availability to key forage and water resources, forcing them to use marginal resources and increasing conflict with local people. Although this is causing considerable difficulty for and pressure on the local and central government to resolve HEC, it is the poverty issue that is most threatening especially in remote areas where hitherto human society had remained remarkably tolerant of elephant. Most of the extirpations were a result of organised poaching gangs from distant communities, often financed from urban centres and through international traders. Rural people appreciate the ecological function of elephants and appraisal has shown that many pastoralists regret the decline in elephants that they observe annually, which is resulting in declining pastures from encroachment of bushland.

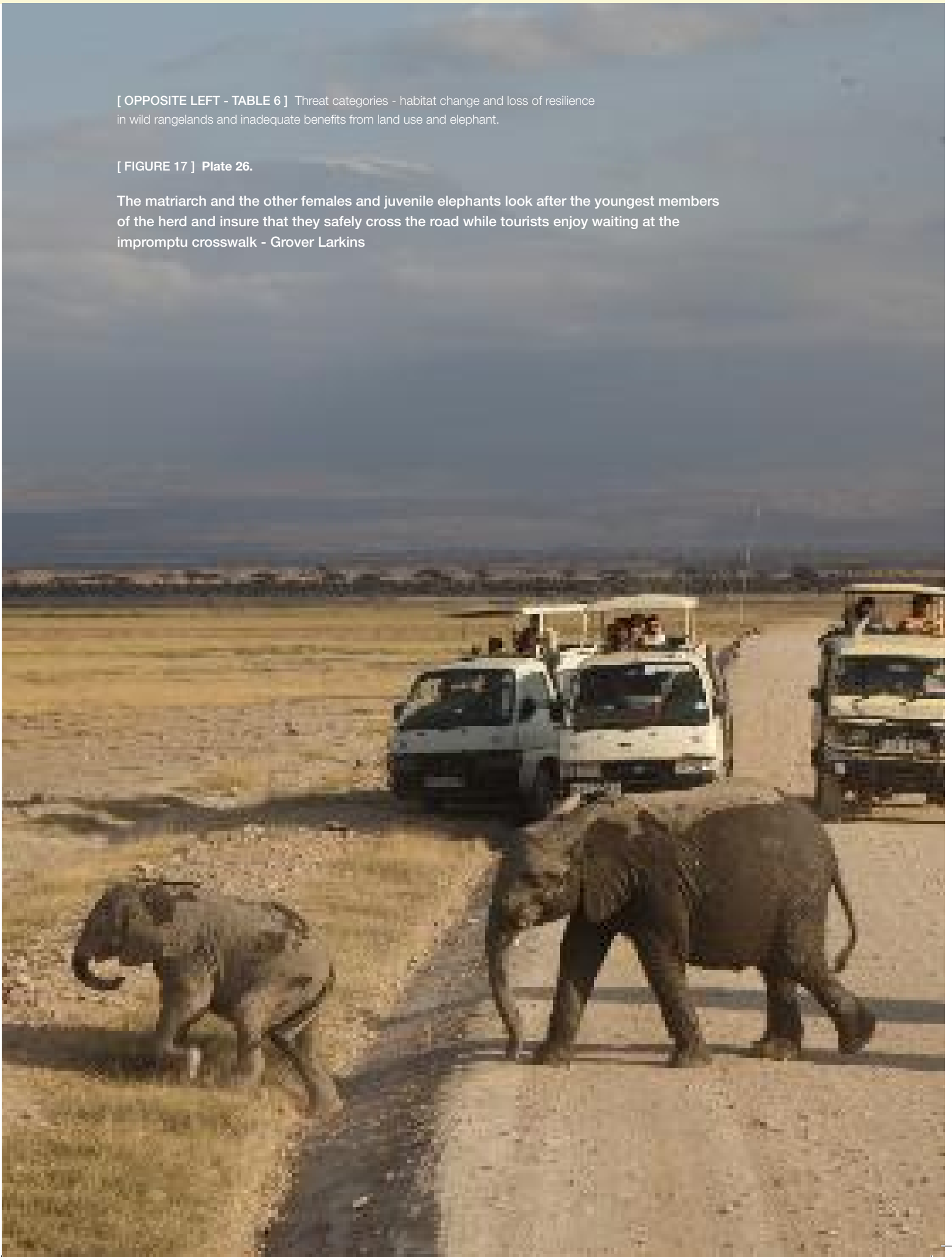
In response to the desire for better integration of communities living with wildlife in the tourism economy, Kenyans have developed novel community-based ecotourism initiatives, many in elephant ranges outside national parks and reserves and this phenomenon is expanding. Continued development of this sector at a sophisticated level within unfenced ecosystems, provides tourists with opportunities that are culturally interesting as well as providing spectacular scenery and wildlife - giving Kenya a competitive edge over other major tourism destinations. A strategy which will provide the basis for elephant expansion into historical range will give further impetus to ecotourism development and bring more remote and poverty-stricken communities into tourism management, providing opportunities for improving their livelihoods sustainably.

Threat	Cause	Constraint	Preconditions / Assumptions (enabling conditions /environment to reduce threats)
Undesirable impact on habitat / ecosystem (inc. endangered plant and animal species)	Elephants at high densities within confined areas, resulting in localised habitat change and reductions in distribution and / or abundance of species of conservation importance.	• Inadequate security within the wider elephant range (illegal firearm proliferation, insecurity in neighbouring countries) • HEC (including fencing) resulting in restriction of elephant distribution • Loss of corridors and habitat fragmentation through elephant incompatible land-use, Government planning, loss of specific critical resources (water, salt lick, high quality food), lack of wildlife based incentives • Lack of harmonisation of Wildlife Policy / Act with other government sectors including Land-Use, Agriculture • Human population growth competing for land and water • Lack of data on elephant impacts on other species in fenced/confined protected areas • Lack of integrated plan for invasive alien plant species (IAPS), grassland management • Increasing elephant population • Poverty	• Political stability in the region • Enabling Wildlife Legislation/Act • Effective site-based elephant management plans • Stable human population growth • Tourism levels maintained or increasing
Loss of rangelands and natural ecological processes in traditional pastoral community lands	Too few elephants in specific rangelands to provide ecological or economic benefits	• Poaching and illegal ivory trade • Lack of security • Increased ivory prices / demand • Loss of ecological driver with impacts on rangeland productivity and woody vegetation dynamics.	
	Climate change that lead to loss of habitat, or more unstable conditions that lead to more environmental degradation	• No effective global agreement in significant reduction in CO2 / CH4 emissions	
Inadequate socio-economic benefits resulting in negative attitude towards elephants	HEC and lack of adequate compensation for HEC	• [covered in HEC section]	
	Benefits going to a minority of people (e.g. lodge owners) who often are not from local communities	• Corruption • No policy on benefit sharing	
	Benefits going to the right people but failure to change behaviour in a way that benefits elephants	• Loss of cultural attachment to elephants	
	Livelihood benefits not linked to conservation	• Poverty • Lack of appropriate support and resources to communities • Inappropriate Wildlife Policy/Act	
	Lack of community-based elephant tourism initiatives		
	Inequitable distribution of resources		
Corruption and mismanagement of resources			

[OPPOSITE LEFT - TABLE 6] Threat categories - habitat change and loss of resilience in wild rangelands and inadequate benefits from land use and elephant.

[FIGURE 17] Plate 26.

The matriarch and the other females and juvenile elephants look after the youngest members of the herd and insure that they safely cross the road while tourists enjoy waiting at the impromptu crosswalk - Grover Larkins



“ This strategy has a 10-year time horizon, and sets measurable short-term Conservation Goals. By achieving these goals, progress towards achieving the long-term Vision will have been made ”

[TOP] Plate 27.

Adult female with her young feeding on a sunny evening. Buffalo Springs National Reserve, Kenya - Renaud Fulconis. Awely, Wildlife and People

2.2 Structure of this strategic document

The logical structure of this Kenyan Elephant Conservation Strategy can be seen from the 'Plan-at-a-glance' (Figure 1) in the executive summary.

The **Vision** sets out the desired situation to be achieved in the future. As such it represents a long-term goal.

This strategy has a 10-year time horizon, and sets measurable short-term **Conservation Goals**. By achieving these goals, progress towards achieving the long-term Vision will have been made. The strategy identifies a number of **Key Strategic Objectives** namely:

1. Protection
2. Population expansion and habitat maintenance
3. Research and monitoring for management
4. Human elephant conflict
5. Incentives
6. Capacity
7. Coordination and support

Achieving **all** of these *Key Strategic Objectives* is essential to successfully meeting the short-term *Conservation Goals*.

In the body of the Strategy, a brief **Rationale** section is given for each *Key Strategic Objective* explaining why the particular *Key Strategic Objective* is important to meeting the *Conservation Goals*.

The Strategy also lists a number of **Objective Targets** which are measurable steps that describe what needs to be accomplished to meet each *Key Strategic Objective*. These *Objective Targets* should be SMART (i.e. Specific, Measurable, Achievable, Realistic and Time-based).

Each *Objective Target* is also specified with a list of **Actions** which need to be implemented in order to achieve the particular target. In addition, **Indicators of Success** are defined for each *Action* which help to define what each *Action* is intended to achieve, and to determine when the *Action* has been performed successfully by those individuals or organisation (**Actors**) responsible for the *Actions*.

[RIGHT]

Plate 28.

Farmers benefit from honey
from protective Beehive Fences

Lucy King, Save the Elephants



3. Strategy vision, goals and objectives

3.1 Vision

A secure future for elephants and their habitats, based on peaceful and beneficial co-existence with people, now and for generations yet to come.



3.1.1 Rationale and considerations

Elephant populations are returning to some areas of former range, particularly in northern Kenya, as security improves. Co-existence with humans at low human densities occurred over millennia until modern times and there are still suitable large habitats in several areas of the country including trans-frontier ecosystems which can simulate these historic conditions: (1) Greater Tsavo ecosystem, including Amboseli, with linkages across the Tanzania border in the West Kilimanjaro basin and Mkomazi; (2) Mara ecosystem, linked to the TransMara, Mau complex, Ngurumans and across the Tanzania border in the Serengeti; (3) Around Mount Elgon across into Uganda; (4) Lamu – Tana ecosystem across into Somalia; (5) Northern Conservation Area linked with the Laikipia-Samburu ecosystem, Marsabit, Meru ecosystem linking into Ethiopia; (6) Nasolot, Rimoi, Kerio Valley, Turkana ecosystem with Sudan.

Elephants can bring significant benefits as: (1) a ‘flagship’ species, a charismatic large mammal, which can be used to generate interest in, and financial support for, the conservation of all wildlife and the communities which share their habitats; (2) an ‘umbrella’ species, whose protection provides collateral security for overall biodiversity and for the tourist industry; (3) an ‘architect’ species, capable of modifying habitats to the benefit of different plant and animal species on a local or wider scale, depending on the nature and extent of the impact; and (4) a ‘keystone’ species in cases where their presence has a strong influence on other species and where their removal is likely to have a correspondingly strong, even ‘cascading’ effect on the structure and function of ecosystems.

The vision for elephants and people in Kenya is one of coexistence. To achieve this will require finding ways for people and elephants to share the landscape, with zones established through participatory planning at local and higher political levels, supported by national legislation. These zones will include: **conservation areas** including priority core habitat areas for elephants and other wildlife, **buffer zones and corridors** containing mixed land use, where protection of human interests is concurrently paramount, and **elephant-free areas** for human use only.

3.2 Overall Goal

Maintain and expand elephant distribution and numbers in suitable areas, enhance security to elephants, reduce human-elephant conflict and increase value of elephants to people and habitat.

[BELOW] Plate 30.

Two young males testing each other's strength by play-sparring

Cynthia Moss, Amboseli Trust for Elephants



3.2.1 Rationale and considerations

Elephants, more than any other large mammal, require a significant amount of space, or more critically, key areas of important habitat linked by movement corridors. Their foraging, social behaviour and life history are based on mobility, their ability to detect, remember and return to areas of favoured habitat or avoid areas of high risk. Restricting elephants' movements creates all the 'problems' associated with elephants in the public mind: conflict where there is overlap between elephant and human populations, and perceived 'overabundance' leading to, or defined by, habitat change in the restricted core areas.

Solutions based on control of elephant numbers by lethal management – control shooting or culling – are ineffective, serving only to exacerbate conflict problems, as surviving elephants' memories of events promotes future aggressive behaviour, and concentration problems, as elephant retreat from confrontation zones to converge on core PAs.

The 1991–1996 KWS Policy Framework and Development Programme emphasised protection of elephant populations after a period of severe poaching, reducing HEC and securing habitat through agreements with communities. These efforts have been largely successful in protecting elephants and in building the basis for working with communities. In broad terms, the elephant population is secure overall, reasonably large and, in many parts of the country, growing steadily. However, the same objectives remain important today. Security in former range areas in northern Kenya remains poor. In addition, the conversion of habitats through human use has continued with increasing isolation and HEC. Furthermore, it has become clear that there should be greater emphasis on partnerships, agreements and participatory land use planning with communities and land owners at the local level. Devolution of tenure and use rights to the lowest levels should be pursued, with attendant agreement of responsibilities for habitat maintenance. At higher governmental and political levels, there should be new and sustained efforts at harmonisation of legislation, policies and practices between different sectors towards a recognised role for natural resource conservation in general and elephant conservation in particular.

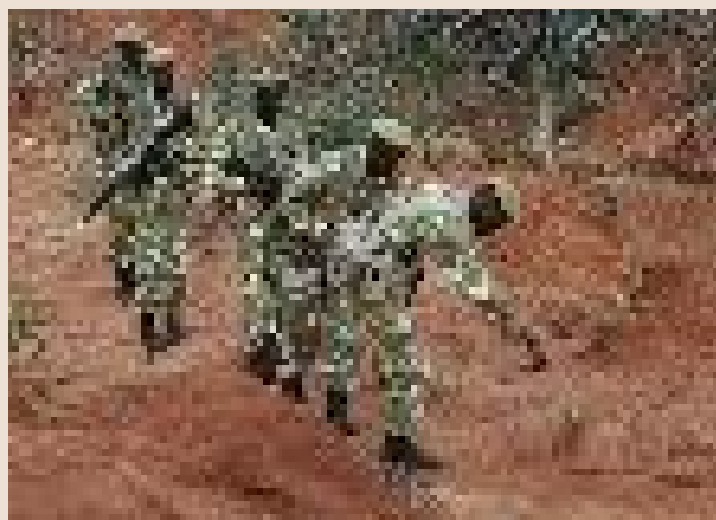
3.3 Strategic Objectives

3.3.1 Protection

[BELOW] **Plate 31.** KWS armed rangers tracking poachers foot mark in Isiolo area, Northern Kenya - Charles Ooro, Kenya Wildlife Service

[OPPOSITE RIGHT] **Plate 32.** Defensive elephant behaviour.
- Iain Douglas-Hamilton, Save the Elephants

Protect elephant populations by minimising poaching through effective law enforcement measures and stakeholder collaboration.



Rationale and considerations

The 1970s and 1980s were a catastrophic period for elephants in Kenya, resulting in the loss of 88% of the population over a period of just 20 years, due to poaching by heavily armed gangs. This poaching was stimulated by international trade in ivory, apathy, lack of effective governance and an ineffective security force. These criminal gangs, through the sale of ivory, were able to purchase more weapons and fund criminal activities that included the theft of livestock and other property, and the terrorizing of rural communities. The formation of KWS in 1989, its security department and armed wing (with automatic weapons, equal to the firepower of the gangs) was a milestone, with dramatic improvements in wildlife security, which was focused on elephant in gazetted PAs. Law enforcement and a CITES ban on international ivory trade led to a decline in poaching pressure and this resulted in elephant population recovery in Kenya. Success in curbing poaching related to the establishment of an effective, well-equipped, resourced and deployed paramilitary force, combined with an intelligence partnership with local communities and landowners.

The rationale for the current strategy is to consolidate this successful policy and sustain its impact in the face of increasing poaching pressure and renewed proliferation of firearms through a force modernisation programme. A key priority is to secure former range areas in northern Kenya for elephants to move in and thus relieve pressure in the existing core populations in Central Kenya. It is clear that demand for ivory is threatening elephant populations across the African continent. Indeed, there have been major ivory seizures recorded elsewhere in the world, identification of active major ivory transit routes to Ethiopia, Somalia and elsewhere, active ivory markets in China (found to be importing raw and recently poached stocks) and Japan (seemingly legal with working of old or 'legal' ivory) and, a price increase in ivory raising concerns that commodity speculators may be buying ivory as a bolster against the recession. The need for greater stakeholder collaboration, especially across borders is emphasised by the increased threat to elephants from unstable neighbouring countries.

To counter this trend, Kenya will be more active on the diplomatic front with major consumer countries such as China which is becoming a major trading partner, as well as focusing on enhanced elephant security. Area-specific strategies will need to be developed with strategic deployment of security units, intelligence cells and investigation units, particularly in the north of the country, with enhanced fire power and aircraft based surveillance to enable expansion of elephant distribution. Capacity will be improved through routine induction of new rangers and focused

training of KWS and private sector armed and non-armed personnel, and the growing numbers of community game scouts, in all aspects of elephant security. A community engagement process should be initiated to reinforce the image of KWS armed wing as a positive force for law and order, helping to ensure a secure environment for both communities and animals. This would enable the establishment of more extensive and reliable informer networks and flow of intelligence information on poaching, illegal activities and trade. Game Scout Associations and private sector/NGO game scout groups are active in a number of areas in the country, working in the context of Group Ranches, community conservancies, research programmes, private sector conservancies and tourism operations. Partnerships should be developed and strengthened between KWS security staff and such groups, with the possibility of the latter receiving honorary ranger status. Operational units should be strengthened and modernised at the required standard including equipping patrol units with adequate monitoring and surveillance systems to provide information feeding into a well developed database reporting system for guiding more effective and efficient coverage of their areas. Weak law and low conviction rates have been seen as a problem undermining the credibility of anti-poaching efforts. Stiffer penalties have been introduced in the revised Wildlife Policy, which is awaiting parliament approval. Efforts must be made to achieve effective cooperation with the judiciary, police, local authorities, provincial administration and community leaders on the capture and prosecution of illegal hunters of elephants (and other wildlife). Cross-border collaboration (Tanzania, Uganda, Ethiopia, Somalia, Sudan) needs to be improved through establishment of formal operational structures as given in the African Elephant Action Plan. The customs authorities are key in this aspect and need to be integrated more fully and be made aware of the strategy and necessary actions.

To support this there must be necessary policy and legislative changes (strengthened law against poaching and illegal trade; effective land use planning and environment impact assessment - EIA); security management of ivory stocks to prevent trophies leaking into illegal market and enhanced monitoring of elephants using appropriate technologies (fitting satellite collars to vulnerable elephant groups including cross-border populations). Consideration needs to be given to the creation of secure corridors and dispersal areas (with community support) and strengthening law enforcement (use of search dogs etc.) at entry and exit points. International dialogue on trade control through a coordinated approach with other countries that have similar policies, and continued discussion with countries having pro-trade policies, are essential for finding a solution to the uncontrolled hunting of elephants. Coordination and cooperation on enforcement and monitoring of illegal hunting and trade in ivory with neighbouring countries, through instruments such as the Lusaka Agreement Task Force (LATF) and INTERPOL, are important for maintaining national protection in the face of globalised trade pressures.

If applied, all this will lead to greater deterrence and reduced poaching with reoccupation of former rangelands by elephants. However, there are challenges to achieving this including; proliferation of firearms and general insecurity (KWS cannot deal with this issue alone: it must be dealt with by the government as a whole), HEC, habitat loss and fragmentation through inappropriate land-use planning and weak wildlife policy and legislation.



Target	Action	Timeline	Actors	Indicators
1.1 Proportion of illegally killed elephants (PIKE) per annum reduced to less than 1%.	1.1.1 Conduct assessment of security effectiveness and needs in elephant distribution range.	By 2012	KWS, relevant stakeholders ¹	Assessment report produced and circulated to decision making framework
	1.1.2 Recruit, train and equip community, KWS, county council and private sector security staff to adequate levels.	2013 onwards	KWS, relevant stakeholders ¹ / partners	- Number of training events - Number/proportion of trained personnel - Number/proportion of personnel adequately equipped
	1.1.3 Increase patrolling intensity in elephant distribution range including aerial patrols to required levels.	Ongoing	KWS, relevant stakeholders ¹	- Percentage increase in area covered - Percentage increase in patrols - Percentage increase in flying hours
	1.1.4 Introduce intelligence informer networks in potential risk areas where they do not exist.	2013 onwards	KWS, relevant stakeholders ¹	Proportion of identified risk areas with newly established intelligence informer networks
	1.1.5 Enhance intelligence networks to specified levels particularly in high risk areas such as the Tsavo, Laikipia-Samburu and Greater Meru Conservation Areas.	Ongoing	KWS, relevant stakeholders ¹	- Proportion of intelligence networks increased to specified levels - Number and quality of intelligence reports - Increased proportion of convictions resulting from informers and intelligence
	1.1.6 Deploy strategic units in security hotspots.	2013 onwards	KWS	Number of units (personnel) deployed in hotspots
	1.1.7 Lobby for an increase in proportion of game scouts with Kenya Police Reserve (KPR) status to enhance powers and legal status.	2012 onwards	KWS, Police	Proportion of game scouts with KPR status
	1.1.8 Proactively deploy patrols in all elephant conservation areas through consistently collecting accurate information on patrol movements, poaching/illegal signs and sightings of threatened species; analysing and updating operational maps.	2013	KWS (Research, Security Dept-rangers)	Number of areas using patrol reports to effectively deploy patrols
	1.1.9 Use satellite radio tracking of vulnerable elephant populations for security back-up.	2013 onwards	KWS, conservation organisations	- Number of elephants collared - Number of monitoring units
	1.1.10 Continue collecting data on ivory trade to help control illegal trade and to support the ivory trade ban.	Ongoing	KWS, customs officials	Data collected and provided to KWS management on a timely manner
	1.1.11 Strengthen country exit and entry points through training in searching and detecting.	2013	Customs officials, KWS	- Number of trained custom and ports officials - Number of sniffer dogs trained and deployed
1.2 Strengthened legislation and enforcement.	1.2.1 Review existing national Wildlife Act and recommend/lobby changes for substantial minimum penalties for the illegal hunting of elephants and the illegal possession of, or trade in elephant products.	By 2012	KWS	Revised Wildlife Act with increased minimum penalties
	1.2.2 Operationalise KWS prosecution unit.	By 2013	KWS	- Number of prosecutors deployed - Proportion of successful prosecutions
	1.2.3 Conduct sensitisation programme for judiciaries.	2013-2015	KWS	- Number of workshops for prosecutors, magistrates and judges - Proportion of successful prosecutions
	1.2.4 Initiate an education and awareness program on elephant illegal hunting and ivory trade issues (e.g. campaigns, setup of ivory museums).	2012 onwards	KWS, relevant stakeholders, NGOs	- Number of initiatives undertaken - Surveys and PRA results documented, disseminated and used to refine activities

Target	Action	Timeline	Actors	Indicators
1.2 Strengthened legislation and enforcement.	1.2.5 Promote regular dialogue with African range states to harmonise position on elephant trade issues, policy and legislation.	By 2016	KWS, State Wildlife Agencies and Ministries	- Improved position on trade issues - Revised policies and legislations
	1.2.6 Continue lobbying for sustained elephant ivory trade moratorium in CITES international community.	Ongoing	KWS, local and international conservation organisations	Elephant remains in Appendix I and II of CITES
1.3 Improved community engagement by security force protecting elephant.	1.3.1 Conduct awareness programmes on wildlife crime and law in high poaching areas.	2012 onwards	KWS, conservation organisations, CBOs	Number of awareness activities
	1.3.2 Increase active involvement of security staff in local community engagement programmes to reinforce the image of KWS armed wing as a positive force for law and order.	2012 onwards	KWS, CBOs	Proportion of community engagement activities involving security personnel
	1.3.3 Develop partnerships with local Game Scout Associations (GSAs) and private conservancy scouts.	2012 onwards	KWS, local GSAs, private sector / NGO scouts	Proportion of GSAs, private scout activities involving security personnel
	1.3.4 Increase understanding of people living with elephants and identify methods to address these issues.	2014	KWS, conservation organisations, CBOs	- Community surveys - PRA data analysed, reports produced and used for adaptive management - Number of sensitised persons
	1.3.5 Conduct school awareness programs on wildlife protection and conservation.	2012 onwards	KWS, conservation organisations	Number of schools visited
	1.3.6 Identify ways to increase value of elephants / benefit flow from protected areas to communities.	2012 onwards	KWS, conservation organisations, CBOs	Number of trips conducted
1.4 Improved cross-border protection of elephants.	1.4.1 Strengthen regional task forces and agreements (e.g. LATF).	2013	KWS, regional ministries, LATF, donors	- Number of annual meetings - Revised protocols and agreements
	1.4.2 Initiate formal collaboration between EAC and SADC elephant and rhino security groups.	By 2014	KWS and neighbouring State Wildlife Authorities	- MoU signed between regional groups - Number of group meetings with representations from both regional groups
	1.4.3 Develop and implement or review and enhance formal structures where they exist for joint cross-border law enforcement operations and intelligence information sharing.	By 2013	KWS, neighbouring State Wildlife Authorities	Number of joint security patrols in priority areas
	1.4.4 Establish a trans-border collaboration framework.	By 2013	KWS, neighbouring State Wildlife Authorities	ToR of the framework

[TABLE 7] Protection strategic objective targets, actions, timelines, actors and indicators. ¹ community, county council, private sector.**Important assumptions:**

- 1 Trained staff remains in place
- 2 Resources available, on time, to equip staff and conduct law-enforcement operations to adequate standards.
- 3 Enabling legislation (changes to Wildlife Act approved by parliament).

4. Regional political stability.
- 5 International/trans-boundary collaboration on law enforcement.
- 6 Government support and political will.
- 7 The Parties to CITES decide not to allow a resumption of legal international trade in ivory.

3.3.2 Population Expansion and Habitat Maintenance

Maintain and expand elephant distribution and numbers in suitable habitat where appropriate.



Rationale and considerations

Elephant range was spread over 70% of Kenya 50 years ago, but it has contracted sharply as Kenya's human population has increased from 8 million in the 1960s to more than 36.1 million in 2006, with the current growth rate of 2.69% amongst the highest in the world (CIA World Factbook - <https://www.cia.gov/library/publications/the-world-factbook>). Human developments have expanded into former elephant range, the species has been killed for its tusks, and due to these increased conflicts, the population plummeted from the high of 167,000 in the early seventies to about 20,000 elephants in the late 1980s (Douglas-Hamilton, 1989). After great investment and effort, the elephant population has recovered to its present level of an estimated 35,000 in 2010. Despite this, much of the former range remains relatively clear of human settlement and activity, but insecurity means that elephants avoid these areas. There are opportunities for range expansion, especially in the northern rangeland frontiers of Kenya and the northern coast. Restoration of the elephant population in these areas would benefit people through recovery of ecological processes in these ecosystems in which elephants are key, ensuring expanding rangelands for traditional nomadic people and their livestock rather than the current contraction and bush encroachment. The saving of these habitats will be the saving of elephants and traditional indigenous communities and sustainable livelihoods, with an increased opportunity for nature-based enterprise and without a concomitant increase in conflict. This would be at a time when these pastoralists might benefit from an increased demand for meat and livestock products in Africa but only if their stock can be made more accessible to markets. Elephants would provide the mechanism for pulling such communities out of poverty through a combined enhancement in productivity of the ecosystem for grazing ruminants, improved infrastructure and alternative income opportunities through tourism. This safeguarding of the elephant range at local level must be accompanied by policy and legislation governing the zoning and use of land. It has been recognised by conservation practitioners that 'vertical integration', involvement in the development of policy, legislation and planning at all levels, from national through district to the local level with communities and land owners, is essential in achieving success. The processes must be fully participatory, with feedback in both directions, top-down and bottom-up.

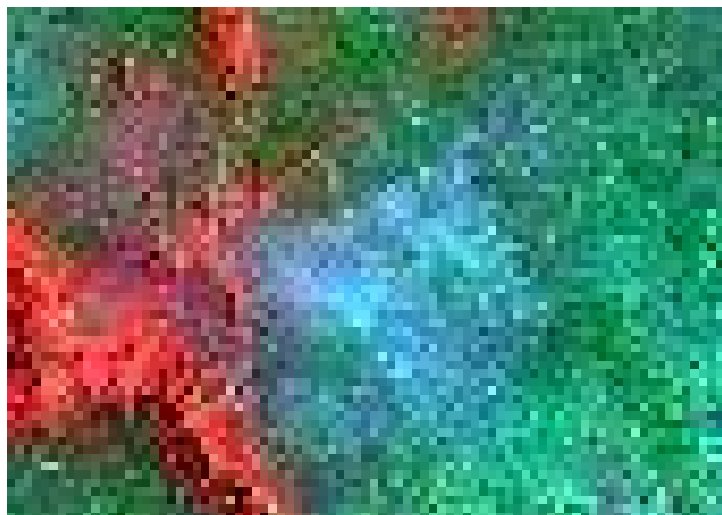
Concern has been expressed by stakeholders and wildlife managers in many parts of Africa about the impact that elephants are perceived to have on plant and animal species when their density is high, and their habitat is thus considered to be 'overpopulated' (Balfour et al., 2007). The negative effects of high elephant density on habitats are often associated with fenced populations, such as in South Africa, where dispersal is blocked (Guldemon & van Aarde, 2008). Fences are certainly a barrier, but elephant populations may also be confined through the effects of poaching and conflict with people over land use, which causes elephants to retreat into and remain in PAs, a process that has been termed 'compression', but could be more accurately described as 'movement restriction' or 'threat-avoidance'. In situations where elephants become completely unable to disperse from a given habitat area, their effects on vegetation, and on animal species dependent on that vegetation, will inevitably become pronounced and of potential concern to managers. The alteration of plant and animal communities by elephants is not necessarily the 'crisis' often portrayed in the media, if the effects are localised and the other species that are affected are common elsewhere in the landscape or, more broadly, in Kenya. Change through time and geographical patchiness are, after all, the ways that natural ecosystems work (Gillson, 2004). There are also critical issues associated with other changes in plant communities which are often caused by human interventions voluntary or involuntary, such as invasive alien plant species which have an equally significant impact. However, when the trapping of elephants inside small areas leads to the loss of important, even endangered plant and animal species, remedial actions must be considered. Intensive management interventions, including translocation of elephants, contraception, closing or moving of water supplies and fencing of habitat areas, are different options for manipulating local elephant densities and each has its benefits and costs, its advantages and undesirable consequences. The primary goal of management should be to maintain the mobility of populations through preservation of corridors in elephant-human landscapes. Conservationists of the Asian elephant have recognised this need for corridors to link habitat areas as a key component of their approach. It is now of crucial importance that KWS intensifies its programme of community and landowner engagement, and harmonisation of policy with other development sectors in governmental and non-governmental circles, to secure wildlife habitat. At the other end of the scale, in the case of very small habitat areas, which have never normally held significant, year-round elephant densities, which may contain plant or animal species of high conservation importance and which have become enclosed through the conversion of surrounding habitat, there comes a point when the question must be asked: is there – or should there be – a future for this elephant population? Examples of this situation include the current populations in Mwea NR, Shimba Hills NP and Arabuko Sokoke NR; the fenced Ngulia Rhino Sanctuary is another case. If there is no realistic prospect of connecting these areas to adjacent elephant habitat, so that seasonal movements are possible, then one option that should be seriously considered is the complete removal of elephants from the area. This is not a decision that can be taken lightly, but it may be preferable to the financial costs and impacts on the elephants of the intensive management required to keep them in the area under such conditions.

[TOP LEFT] Plate 33.

Elephants on the move, Laikipia / Samburu Kifuko Ranch - Max Graham, Space for Giants

[RIGHT] Plate 34.

A satellite image (2001) of Ngulia Rhino Sanctuary showing the extent of vegetation degradation due to the high number of elephants and other browsers xconfined within the area
- Kenya Wildlife Service



Target	Action	Timeline	Actors	Indicators
2.1 National elephant distribution increased by at least 30% by 2020.	2.1.1 Identify and prioritise areas for extended distribution.	2012	KWS, Kenya Forest Service (KFS), relevant government ministries, conservation and development organisations, communities.	- Number of priority areas identified - Acreage of priority areas identified - Maps and documentation produced and circulated to decision-making framework
	2.1.2 Obtain community support and participation.	2012-2021	KWS, relevant government ministries, local administrations, conservation and development organisations, communities.	- Positive community attitudes established through sensitisation programs etc. - Number of MoUs signed
	2.1.3 Improve wildlife related security in selected areas.	2012-2021	KWS, provincial administration, community scouts	Number of wildlife related incidents declining
	2.1.4 Establish institutional and legal arrangements to bring new areas into occupation by elephants.	2012-2021	KWS, KFS, conservation and development organisations, communities, local councils, provincial administration	- Number and size of new elephant areas established - Number of elephants in extended areas
	2.1.5 Develop regional elephant management plan to harmonise cross-border population security and management.	By 2016	Regional State wildlife authorities, IUCN AfESG, conservation organisations	Regional strategy endorsed by State ministries
2.2 Elephant numbers increasing by at least 2% per annum where suitable habitat for recovery exists.	2.2.1 Identify and prioritise areas for population increase.	2012	KWS, KFS, relevant government ministries, conservation and development organisations	Number of priority areas identified
	2.2.2 Obtain community support and participation.	2012-2021	KWS, relevant government ministries, local and provincial administration, conservation, communities and development organisations	- Positive community attitudes established - Number of MoUs signed
	2.2.3 Improve wildlife related security in identified priority areas based on security assessments.	2012-2021	KWS, provincial administration, security forces, community scouts	Number of wildlife related security incidents declining
	2.2.4 Establish and monitor population trends based on improved survey and monitoring methods.	2012-2021	KWS, research organisations, relevant stakeholders/partners	Survey reports
2.3 Systems in place and implemented to improve altered habitats in elephant range by 2021	2.3.1 Survey and prioritise areas for intervention through research and monitoring.	2013	KWS, KFS, research organisations	Number of priority areas identified and surveyed; survey reports
	2.3.2 Identify appropriate interventions through research and monitoring.	2013-2016	KWS, experts from research organisations	Number of interventions identified

Target	Action	Timeline	Actors	Indicators
2.3 Systems in place and implemented to improve altered habitats in elephant range by 2021	2.3.3 Implement interventions (e.g. partial / complete elephant removals, contraception, fencing elephants out of key areas, re-opening corridors) through an agreed decision-making framework; monitor the effects through research and monitoring.	2016-2021	KWS, conservation and development organisations	- Number of intervention projects completed - Reports on the effects of the interventions
2.4 At least 10 corridors, including cross-border ranges, and buffer zones established and maintained, along with existing buffer zones and corridors.	2.4.1 Identify and prioritise corridors and buffer zones to allow dispersal between preferred habitats.	2012-2013	KWS, conservation and research organisations	- Number of corridors and buffer zones identified and prioritised - Report with maps produced and disseminated
	2.4.2 Establish process to create corridors and buffer zones through an agreed decision-making framework.	2012-2013	KWS, local communities and authorities, Lands Department and other relevant Government Ministries	Process agreed across government and civil society
	2.4.3 Establish a \$10m fund to finance establishment of corridors and buffer zones.	2012-2016	KWS, private, multilateral and bilateral donors	Fund established
	2.4.4 Obtain community and political support and participation in targeted corridors and buffer zones.	2012-2021	KWS, KFS, relevant ministries, conservation and development organisations, local communities and councils, provincial administration	- Positive community attitudes established through sensitisation programs, surveys etc - Number of MoUs, legal documents signed
	2.4.5 Ensure EIA is carried out and effectively used for decisions on any planned developments in elephant corridors.	2012-2021	KWS, National Environmental Management Authority (NEMA), relevant ministries, local councils and provincial administration	EIA reports on all potential developments disseminated through decision-making framework
2.5 Principle of elephant management that allows natural population regulation accepted nationally and internationally	2.5.1 Establish the science base for this position.	2012-2013	KWS, experts from research organisations	Research-based policy accepted by KWS, Government of Kenya (GoK), public, international community
	2.5.2 Create media resources to explain policy.	2013-2015	KWS, conservation organisations, media businesses	Materials completed
	2.5.3 Create training materials and train relevant KWS staff to explain policy; conduct awareness.	2013 onwards	KWS, organisations / experts in change management and training	- Number of trained staff, materials completed - Number of awareness activities conducted

[TABLE 8] Population Expansion and Habitat Management strategic objective targets, actions, timelines, actors and indicators

Important assumptions:

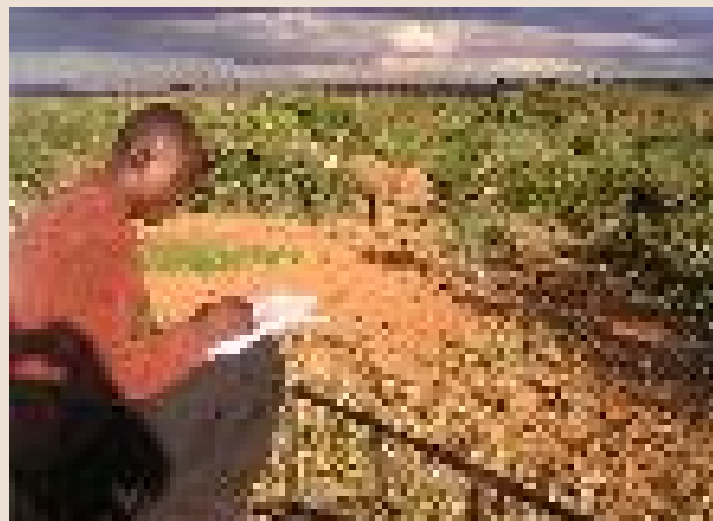
- 1 Trained staff remains in place.
- 2 Community and political buy-in (local government policies and communities remain supportive).
- 3 Political stability in the region.
- 4 Sufficient resources available to improve security, monitoring and habitat management.
- 5 Multilateral and bilateral donors supportive of initiatives.

3.3.3 Research and Monitoring for Management

[BELOW] Plate 35.

A KWS ranger learning to identify individual elephants - Max Graham, Space for Elephants

Strengthen existing monitoring systems and conduct priority research to provide information for adaptive management and protection of elephants and critical habitats.



Rationale and considerations

Research and monitoring are needed for the protection and management of elephants and their habitats and to make informed decisions on the basis of adaptive management. Monitoring systems are already in place and many are standardised. These systems need to be maintained and strengthened / harmonised where necessary. There is also a need to identify priority research and monitoring needs, knowledge gaps and ensure research provides information for management and is used in a timely manner. Research on drivers of change is particularly important in this respect and decisions need to be made based on the best available evidence and not on personal opinion.

There is a need to improve flow of data and information between KWS and other stakeholders / researchers on ivory trade (seizures, arrests, fire-arms recovery) and its drivers, elephant distribution, mortality, population dynamics etc. There will need to be a focus on reporting elephant mortality and monitoring elephant numbers, through aerial surveys, ground counts and dung counts, but also a need to focus on trends and indicators of trends that are as close to real time as possible. Currently, the window of analysis is as much as 5 years, which is too long for adaptive management. Since the objective is to ensure a population that is expanding in its distribution, then it is trend data related to these aspects which are needed rather than absolute numbers. So whilst strengthening and improving existing systems for monitoring elephant numbers and mortality, there is a need to make them more efficient and cost effective. This puts a priority in the strategy in identifying appropriate new technologies and methodologies to serve this objective. The basis for this will be to intensify the monitoring on a more regular basis in the elephant range, incorporating ranger-patrol based monitoring systems feeding databases to provide real-time information on trends and changes in animal numbers, poaching rates etc. This will reduce the need for expensive irregular one-off counts, which are necessarily restricted to certain locations for reasons of costs and history, therefore providing a more holistic picture of elephant and related threats in Kenya. One of the first tasks will be in identifying areas that require more monitoring in order to re-focus security and encourage elephant re-occupation of former and available range. Research is needed on improving coexistence and sustainable site-specific methods for reducing conflict e.g. deterrence – barriers, but also behavioural mechanisms such as chemical irritants, biological agents (honey bees) and elephant-friendly farming practices and crops.

Research is also required on effects of localised high elephant density (i.e. elephant population whose movement is restricted either through erection of physical barriers or human settlement) on habitat, including important plant and animal communities, and on elephant population needs for land and corridors, threats and solutions. It is very important to note that the interaction between elephants and vegetation is not simple, either geographically or through time. Elephants are generalists and they have effects on trees, shrubs and grass, and can switch between different species and different plant types, persisting on one type if the other is reduced. The population dynamics of trees and bushes are slow, and if high elephant densities reduce large trees, any small trees/seedlings can still be affected by low densities of remaining elephants. There is no single 'preferred elephant density' that can be easily defined that will allow a community of preferred plants and animals to persist. Instead, localised elephant effects should be encouraged to vary across a landscape, so that diversity is present at a broad scale (van Aarde & Jackson, 2007).

The economics of crop failure, identifying elephant impact in relation to other causes, financial aspects of the role of elephants in revenue generation and land use and livelihoods in elephant landscapes are important aspects for research.

Target	Action	Timeline	Actors	Indicators
3.1 Effective and sustained systems for monitoring elephant numbers in key forest and rangeland populations carried out every four years.	3.1.1 Conduct aerial census of key rangeland populations every four years (Tsavo, Meru, Laikipia /Samburu, Amboseli, Mara / Narok, Nasolot / South Turkana ¹) and where census is not possible an estimate through surveys.	Every four yrs	KWS	Survey reports produced and disseminated
	3.1.2 Refine and test methods for improved surveys of forest populations (Mt. Elgon).	2012	KWS	Reports produced with analysis of data, evaluation of methods and recommendations
	3.1.3 Apply standardised improved forest survey method(s) to key forest populations (Mt. Elgon, Mt Kenya, Aberdares, Mau, Marsabit ²).	Every four yrs	KWS	Survey reports produced and disseminated
	3.1.4 Carry out surveys to establish status of less known populations (aerial/ground) (e.g. Boni / Dodori, Lamu / Tana River, Malka Mari, Turkana / Kidepo, Nguruman / Mau ³).	Every four yrs	KWS / partners	Survey reports produced and disseminated
3.2 Standardised ranger / scout based monitoring implemented by 2013 in four priority areas to provide information for management and TRAFFIC/CITES.	3.2.1 Pilot MIST system in two PAs within two years (Tsavo, Mara).	2012	KWS	- Number of trained staff - Report with recommendations produced for management
	3.2.2 Expand MIST to two new areas based on trials ⁴ .	2012-2013	KWS	- Depending on trial results: - Number of trained staff - Data in MIST system - Annual monitoring reports disseminated for management and TRAFFIC/CITES
	3.2.3 Standardise elephant mortality monitoring and reporting country-wide in collaboration with other partners.	2012 onwards	KWS and partners	- Standardised monitoring system in place - Annual reports of elephant mortality produced and circulated

Target	Action	Timeline	Actors	Indicators
	3.2.4 Harmonise national and Monitoring the Illegal Killing of Elephants (MIKE) monitoring and reporting system.	2012	KWS and partners	- Harmonised database in place - Standardised annual reports produced and disseminated
	3.2.5 Establish a community scouts to KWS data flow system on elephant numbers, demography and distribution.	2012	KWS, community scouts	- System for data flow established - Analysis of data from stakeholders produced and circulated in annual reports
3.3 Data from research and monitoring used in elephant management and policy formulation throughout strategic plan period.	3.3.1 Carry out research in identified critical enclosed populations to determine model / methods for estimating the persistence through time of plant and animal communities at different elephant densities (identify critical closed ecosystems to conduct research).	2012-2014	KWS, research organisations	- The persistence through time of plant and animal communities at different elephant densities established for at least two enclosed populations - Report with recommendations produced and circulated
	3.3.2 Initiate / continue research / monitoring in identified sites (e.g. Aberdares, Shimba Hills, Laikipia) to determine the effects of fencing on both habitats and elephant populations (identify sites for research/monitoring).	2012	KWS, research organisations	- Monitoring initiated and ongoing in key fenced areas - Data analysed, reports produced and disseminated for management
	3.3.3 Conduct research, including experimental application, on techniques and consequences of contraception and translocation on both affected animals and remaining population	2013–2016	KWS, research organisations	Comprehensive reports with recommendations produced and disseminated including in peer-reviewed journals
	3.3.4 Research and trial emerging methods or combinations of methods including traditional/indigenous approaches to reduce HEC.	2012-2013	KWS, research and conservation organisations	- Number of emerging methods trialled - Number of sites trials conducted - Effectiveness of new methods evaluated and report produced
	3.3.5 Establish systematic monitoring of effectiveness of interventions on human-elephant conflict.	2012	KWS, research and conservation organisations	- Monitoring system in place - Analysis and interpretation of data on annual basis and used to review methods
	3.3.6 Monitor and rank effects of elephants on ecosystem structure and function inc. important plant and animal species in all critical habitats, with results feeding back to decision-making framework.	2012 onwards	KWS, research and conservation organisations	- Number of critical habitats identified for monitoring - Monitoring system in place providing baseline and trend information; and priority ranking - Reports produced and disseminated in a timely manner
	3.3.7 Assess and monitor habitat fragmentation and change both nationally and trans-boundary.	2012 onwards	KWS, research and conservation organisations	Number and quality of maps and reports produced and disseminated in a timely manner

Target	Action	Timeline	Actors	Indicators
3.3 Data from research and monitoring used in elephant management and policy formulation throughout strategic plan period.	3.3.8 Monitor levels of human encroachment in identified critical corridors (e.g. Isiolo / Imenti, Isiolo / Meru, Oldonyiro / Kipsing).	2012 onwards	KWS, research and conservation organisations	- Number of critical corridors identified for monitoring - Monitoring system in place providing baseline and trend information
	3.3.9 Expand the study of elephant movement patterns in identified areas (e.g. cross-border populations, less well known populations, key corridors) using radio tracking technology.	2013 onwards	KWS, research and conservation organisations	- Number of study sites / populations established - Number of elephants collared - Data analysed, reports with maps of movement patterns produced and circulated at least on bi-annual basis
	3.3.10 Develop research activity on elephant disease prevalence and impact particularly during stress conditions such as drought.	2013	KWS, research organisations	Report / publication produced and recommendations made
	3.3.11 Conduct cost-benefit studies on the role of elephants in revenue generation; and land use and livelihoods in elephant landscapes.	2013-2016	KWS, conservation and research organisations	Reports produced and disseminated
	3.3.12 Investigate impacts of climate change on elephant habitat and elephant populations through appropriate research.	2012 onwards	KWS, research organisations	Study reports produced and circulated
	3.3.13 Identify additional critical research needs/knowledge gaps.	2012	KWS, research organisations	Report with recommendations produced and disseminated
3.4 Information on ivory movements collected and effectively used to control illegal trade throughout the strategic plan period.	3.4.1 Continue providing information to TRAFFIC and Elephant Trade Information System (ETIS).	Ongoing	KWS	Ivory trade data processed and disseminated to relevant groups in a timely manner
	3.4.2 Train KWS personnel in analysis and interpretation of ivory trade data.	2012	KWS	- Number of trained staff - Reports on analysis and interpretation of data on a regular basis
	3.4.3 Modify and improve the existing security database for more effective and timely analysis of data.	2012	KWS	- Database reviewed and improved - Regular reports produced and circulated
	3.4.4 Use DNA analysis to establish origins of confiscated ivory.	2012 onwards	KWS, research organisations	Origin of confiscated ivory established

[TABLE 9] Research and Monitoring for Management strategic objective targets, actions, timelines, actors and indicators

¹ list of key rangeland populations for regular aerial surveys need to be finalised² key forest populations for standardised, regular surveys need to be identified³ less known populations need to be identified and appropriate methods for surveys carried out⁴ priority areas for MIST need to be identified by KWS**Important assumptions:**

1 Trained staff remains in place.

2 Resources available on time to carry out research studies, trials and surveys.

3.3.4 Human Elephant Conflict (HEC)

[BELOW] Plate 36.

The bull Yaeger checking out old tracking collars in Save the Elephants research camp, Samburu
- Iain Douglas-Hamilton, Save the Elephants

**Enhance HEC mitigation
by involving stakeholders
at all levels in the use of
appropriate site-specific
methods.**



Rationale and considerations

It is essential, if elephants are to be tolerated in landscapes that are also occupied by people, that their effect on economic costs and loss of property is minimised within the context of rural livelihoods. It is, of course, the case that elephant damage is just one, and often a relatively minor, reason for the failure of crops or livestock husbandry in Kenya, and the issue of HEC should be viewed in the broader context of agricultural production and development. Nevertheless, the elephant is the most significant conflict species in Kenya and causes the greatest number of conflict cases in a number of hotspots, namely: Tsavo East and West, Lamu, Laikipia, Narok and Transmara. The causes of conflict vary, arising from a lack of land-use and land-tenure policy and demographic changes. Rapid human population expansion along with increasing number of elephants, that are concentrated in a few zones, results in encroachment of each in their respective areas, with subsequent increasing competition for pasture and water leading to damage, injury and killing. Elephants 'know' secure areas: by creating security in former range areas with low human density, these areas will be opened up enabling a wider distribution of elephant across Kenya, and thus reducing conflict.

To date, making conflict mitigation sustainable has been a challenge, through involving the affected communities in the activities themselves, with farm-based deterrence methods and maintenance of fencing (LWF, 2002; MGM, 1999). Control shooting of offending animals has been used as a last resort. The killing of elephants, whether by control officers or affected citizens taking the law into their own hands, must be approached with caution, since the surviving members of the elephant population will be alarmed and/or angry. They will now associate people with the death of their companions and there could be an increased risk of aggressive interactions. There is a need for specific area strategies, mandatory acquisition of elephant corridors, formation of conflict resolution communities and conclusion of the new Wildlife Bill as soon as possible. This will provide a framework for minimising HEC through education, awareness, establishing linkages and community support for conservation and coexistence with wildlife. Mitigation can be achieved through site-specific methods, community mobilization for self-help groups and deterrence, building community capacity for their involvement in wildlife management, compensation and quick processing of HEC cases, implementing corporate social responsibility, and by supporting enterprise nature-based projects and business. KWS can help through enhanced devolution, improved KWS presence in hot spots identified through MIKE and other intelligence systems, improved relations with communities and stakeholders with formation of a rapid response team, translocation interventions and use of protective fencing, as well as attention to education, water, health and enterprise. A decision-making system for identifying problems, approaches and monitoring of

success or failure will be needed (Hoare, 2001). Participatory land use planning and zoning in partnership with KWS and other relevant Ministries should accompany HEC approaches, so that reduction of losses to elephants is not simply accompanied by greater expansion of intensive agriculture or pastoralism, and thus greater loss of elephant habitat.

NGOs working with elephants can assist through: a) helping monitor elephant movements using GPS tracking collars; b) provision of geo-fencing; c) studying elephant behaviour and developing effective deterrent methodologies; d) assessing impacts of lodge development and settlement; and e) bringing to the attention of land use planners and licensors the harm caused by the use of key resource areas, especially in and around PAs, by livestock, community and enterprise which drive elephant to raid and damage crops and water sources of a wider community in buffer zones and beyond. The challenges to implementing the strategy in a comprehensive manner are vast, but if not tackled, the casualty will in the end be the elephant, and with much human suffering on the way.

Target	Action	Timeline	Actors	Indicators
4.1 Conservation compatible land use in areas of existing or potential HEC.	4.1.1 Assess, review and recommend appropriate land uses in specific areas.	Ongoing	KWS, relevant Government Ministries, conservation and development organisations, communities	Land use maps and recommendations produced and provided to decision-making framework
	4.1.2 Review, recommend, and continue to lobby for changes in legislation for conservation-compatible land use.	Ongoing	KWS, relevant Government Ministries and departments, Civil Society	Recommendations approved, published and used for lobbying
	4.1.3 Sensitise District Environmental Committees (DEC) on elephant and wildlife issues.	By end 2012	KWS, stakeholders	Number of meetings held, minutes documented and circulated
	4.1.4 Use District Environmental Committees for constituency-level cross-sectoral planning.	Ongoing	DEC, KWS, relevant stakeholders	KWS/Stakeholder presence at DEC meetings, minutes documented and circulated
	4.1.5 Initiate process for developing community conservancies in appropriate areas.	2013 onwards	Communities, KWS, other relevant stakeholders, NGOs and private sector	Number of conservancy development processes initiated
	4.1.6 Conduct cost-benefit analyses of elephant-friendly crops through pilot studies and promote viable solutions.	By end 2013	KWS, relevant stakeholders, research and conservation organisations	Report on cost-benefit analyses produced and used for promoting viable solutions through exchange visits etc.
	4.1.7 Sensitise NEMA on wildlife and elephant issues.	By end 2012	KWS, NEMA	Number of meetings held, minutes documented and circulated
	4.1.8 Ensure new developments in elephant distribution range (including fences, structures etc.) undergo EIAs and that existing developments undergo an environmental audit.	Ongoing	NEMA, KWS, stakeholders	- Proportion of new developments based on EIAs - Proportion of existing developments with audits undertaken

Target	Action	Timeline	Actors	Indicators
4.2 Protection from elephant damage of crops and property on the boundaries of elephant distribution range significantly improved.	4.2.1 Review existing fences and identify underlying determinants of fence performance.	By end 2012	KWS, stakeholders	- Number of site visits - Review published and circulated
	4.2.2 Develop and implement national fence plan.	2013, Ongoing	KWS, stakeholders	- Fence plan operational by 2012 - Number and length (km) of well-maintained elephant-proof fences as reported in regional annual status reports
	4.2.3 Establish/Enhance a fencing technical support and maintenance unit within KWS.	By 2013	KWS	Unit established/enhanced through recruitment of skilled staff and resources
	4.2.4 Trial deterrents (disturbance methods, watch towers, fires, chilli fences, beehive fences, innovative technologies) to determine potential effectiveness in different sites.	Ongoing	KWS, landowners and communities, research organisations	- Results published and disseminated - Number of exchange visits
	4.2.5 Build the institutional and technical capacity of communities to use available and tested elephant deterrents.	Ongoing	KWS, landowners, relevant stakeholders/partners	- Number of Conflict Resolution Committees established and functional - Number of community members trained and involved in HEC mitigation
	4.2.6 Improve awareness in affected communities about elephant conservation and HEC.	Ongoing	KWS, relevant stakeholders/partners	- Number of awareness programs - Number of people reached
	4.2.7 Trial innovative technologies such as satellite tracking, geo-fencing etc. in the control of potential problem animals as part of research and monitoring.	2012 onwards	KWS, relevant stakeholders/partners	Number of trials with costs-benefit analyses
4.3 Corridors secured in areas of existing or potential HEC by 2021.	4.3.1 Integrate HEC and other elephant data into the planning process for creating corridors and buffer zones as part of population expansion and habitat maintenance program.	2012 onwards	KWS, relevant stakeholders/partners	Corridor and buffer zone plans based on HEC data where available/relevant
4.4 Management of HEC informed by sound data collection and analysis.	4.4.1 Centralise, standardise and harmonise data collection and reporting system through clear protocols implemented by stakeholders, training and operational database system.	By end 2012	KWS, relevant stakeholders/partners	- Database system developed and in use - Protocols developed and being effectively used through training programmes as needed - Number of HEC incidence reports

Target	Action	Timeline	Actors	Indicators
4.4 Management of HEC informed by sound data collection and analysis.	4.4.2 Increase data collection coverage to at least 10% of HEC area.	2013 - ongoing	KWS, relevant stakeholders/ partners	- Number of HEC incidence reports - Priority conflict areas covered
	4.4.3 Enhance involvement of local game scout associations, in the detection and reporting of problem animal incidents, and in earlier warning of potential occurrences to KWS.	2012 onwards	KWS, affected communities, local game scout associations	Decline in problem animal incidents
	4.4.4 Analyse data and generate standardised reports on a timely basis.	Ongoing	KWS, relevant stakeholders/ partners	Number of reports produced and disseminated on time
	4.4.5 Incorporate results of data analyses into the coordination and decision-making framework of KWS and stakeholders at local level.	2012 - ongoing	KWS, relevant stakeholders/ partners	Minutes of meetings documenting management decisions
4.5 Capacity of KWS in HEC resolution and mitigation enhanced by 2015.	4.5.1 Develop and implement HEC training program (including conflict resolution, community engagement and PAC).	By end 2012	KWS, relevant stakeholders/ partners	- Number of staff trained - Number of PAC incidents successfully carried out - Decline in number of HEC
	4.5.2 Deploy KWS personnel experienced in HEC issues and mitigation.	By 2013	KWS	- Deployment report produced and circulated to KWS HR - Proportion of desired qualified personnel deployed.
	4.5.3 Acquire necessary additional resources such as equipment for HEC mitigation.	Ongoing	KWS, relevant stakeholders / partners	Resources deployed
	4.5.4 Develop and implement plan to manage HEC, integrating both local communities and other stakeholders in participatory planning.	By 2013	KWS, relevant stakeholders / partners	Comprehensive plan produced and implemented

[TABLE 10] Human Elephant Conflict strategic objective targets, actions, timelines, actors and indicators

Important assumptions:

- 1 District Environmental Committees are supportive of constituency-level cross-sectoral planning.
- 2 Trained staff remains in place.
- 3 KWS recruits/builds capacity of HEC staff.
- 4 Significant funding and resources in place for implementing recommended consolation schemes, conservancies and HEC mitigation.

3.3.5 Incentives

[BELOW] Plate 37.

Beehive fences protecting farms near
Tsavo West NP - Lucy King, Save the Elephants

Provide benefits that will encourage landowners and local communities to tolerate, protect and accommodate elephants.



Rationale and considerations

Convincing communities to live in coexistence with elephants will take more than education and awareness and a commitment to conservation of a species; it will require security of life, property and crops, and compensation to mitigate loss. It will require the provision of tangible benefits, directly linked to the presence of elephants, which will increase tolerance and custodianship of elephants among people that own and use land outside of the government PA network, where much of the existing and potential range for elephants in Kenya occurs.

The provision of adequate compensation for losses suffered has had difficulties: the enormous potential cost, the shortfall in expectations by those affected and the prevalent incidence of false-reporting. It is also counter to government policy. An alternative approach is 'consolation' payment, which is not intended to substitute the market value for the loss, but as a gesture of goodwill. These schemes have had some limited success in reducing tensions between people and elephants as they are often dependent on the availability of external funding sources, through NGOs and committed individuals. Thus, their long-term sustainability is open to question.

More sustainable approaches need to be explored, such as environmental risk insurance schemes as part of a framework of support to rural livelihoods (Sachs, 2007). Such schemes, which are rooted in rural development programmes, could be developed in combination with micro-finance approaches linked to conservation-friendly investment opportunities, to improve and diversify local livelihoods. Other approaches include community self-insurance schemes. The levels of compensation and contributions are set, and investigations and payments are undertaken by community members themselves, with support from NGOs and government. A similar approach is underway in relation to compensation for predation on livestock in southern Kajiado District, Kenya. Such approaches, where the local citizens themselves are in charge of the programme, have a greater likelihood of success. There is scope for broadening the involvement in compensation funds of other stakeholders, who are beneficiaries of wildlife in Kenya – other land owners, private sector commercial tourism operators and higher level organisations, such as airlines, hotel groups and suppliers to the tourism industry.

The generation and streaming of positive benefits to landowners, including promotion of rational and collaborative planning of land use in elephant range, is important. Incentives will need to be present at many levels; government,

the electorate and most importantly the landowners and occupiers. Benefit generation to local stakeholders should be supported by government (through subsidies and other incentives), and the private sector and NGOs, who have access to skills and financial resources that can leverage support for elephants among local constituencies. These bodies should also work to develop other livelihood strategies that may not be directly derived from wildlife, but are compatible with wildlife conservation (such as, for example, the Community Markets for Conservation and Rural Livelihoods “COMACO” programme in Zambia) and serve the broader purpose of creating and maintaining habitat for tourism activities. KWS should coordinate more closely with the government’s tourism authorities, as well as agencies responsible for rural development. There will need to be incentive for rational and collaborative planning of land use in elephant range. There have been opportunities to invest resources to develop and diversify land use towards nature conservation. However, what is so far lacking is the formal devolution of tenure and/or agreements with Government over wildlife use rights so that investment can be based on the expected benefits. The revised draft Wildlife Policy addresses this and it is hoped that the Wildlife Bill will also support devolution.

Target	Action	Timeline	Actors	Indicators
5.1 Enabling policy environment in place to encourage landowners and communities to accommodate wildlife.	5.1.1 Assess attitudes towards elephants within the context of current policy among owners of land of strategic importance to elephant conservation.	End of 2012	KWS, relevant stakeholders/partners	Published report, degree of tolerance (through surveys)
	5.1.2 Review, recommend, lobby for and implement enabling legislation and regulations to encourage communities and landowners to accommodate wildlife and for stakeholders to take a greater role in the conservation of elephant.	Ongoing	KWS, relevant stakeholders/partners	- Revised policy, legislation and regulations - Increasing number of communities supporting sustainable conservation
5.2 Increased income generation from tourism in elephant conservation areas across Kenya.	5.2.1 Conduct assessment of future tourism potential, requirements for sector growth and existing capacity within each cost bracket (low, medium and high) in Kenya.	Mid 2012	Kenya Tourism Board	Published report, and recommendation adopted and implemented
	5.2.2 Identify sites for tourism development within strategic elephant range areas across government, private and community owned land.	End of 2012	KWS, relevant stakeholders/partners	Map and report; suitable sites identified
	5.2.3 Develop tourism concession agreements for sites identified.	End of 2013	KWS, tourism operators, private investors, landowners, relevant stakeholders/partners	Number of new tourism concession agreements, database developed and operational
5.3 More sustainable compensation, consolation and insurance mechanisms against losses from elephant damage trialled and if successful implemented.	5.3.1 Review and assess global and national systems of compensation mechanisms and make recommendations for national policy.	End of 2012	KWS, research organisations	Report produced and disseminated to decision-making framework
	5.3.2 Assess success of existing consolation scheme in Amboseli and expand to other areas if appropriate.	End of 2013	KWS, relevant stakeholders/partners	- Assessment report produced and disseminated to decision-making framework - Mechanisms implemented and tested as appropriate

Target	Action	Timeline	Actors	Indicators
5.3 More sustainable compensation, consolation and insurance mechanisms against losses from elephant damage trialled and if successful implemented.	5.3.3 Encourage stakeholder participation in Elephant Consolation Schemes where appropriate.	Ongoing	KWS, relevant stakeholders/partners	Number of effective consolation schemes in place
	5.3.4 Investigate more sustainable approaches such as environmental risk insurance schemes, locally-based rural conservancy compensation schemes and micro-finance approaches to diversify local livelihoods and support implementation.	2013 onwards	KWS, rural development agencies, relevant stakeholders / partners	- Cost / benefit analyses with reports - Number of schemes tried and implemented - Assessment reports
5.4 At least 30% of existing unprotected elephant range in arid or semi-arid lands is protected under community conservation governance structures.	5.4.1 Identify existing unprotected elephant range located in arid or semi-arid areas.	End of 2012	KWS	Map and published report, number of hectares
	5.4.2 Identify existing land-tenure, land governance entities and key leaders within these elephant range areas.	End of 2012	KWS, relevant stakeholders / partners, relevant GOK ministries	Map and published report, database developed and functional
	5.4.3 Encourage and support the creation of representative community conservation entities and associated conservancies within unprotected elephant range areas.	End of 2014	KWS, relevant stakeholders / partners, local communities	Number of legal entities registered and functioning
	5.4.4 Develop work plans and budgets for management of community conservation areas.	End of 2015	KWS, relevant stakeholders / partners, community conservancies	Number of plans and budgets developed and implemented
	5.4.5 Establish agreements with investors, donors and conservation NGOs to provide management, governance, technical and financial support to conservancies.	End of 2017	KWS, relevant stakeholders / partners, donors, private sector investors, tourist operators	Number of agreements, number of community conservancies receiving support
	5.4.6 Provide training for effective conservancy management (security, ecological monitoring, fundraising, grazing management, accounting, governance etc.).	End of 2019	KWS, relevant stakeholders / partners	Number of training courses and feedback, attendance lists, formal certificates, database developed and functional, conservancies managed like PAs
5.5 Improved livestock management, grazing systems, optimal cattle densities and market penetration among pastoralist occupied parts of Kenya's elephant range.	5.5.1 Review and trial management interventions for rangeland rehabilitation that are acceptable to and can be supported by pastoralists.	End of 2014	KWS, research organisations (International Livestock Research Institute - ILRI), relevant ministries	Published results from review and trials, demonstration plots mapped out, number of hectares

Target	Action	Timeline	Actors	Indicators
5.5 Improved livestock management, grazing systems, optimal cattle densities and market penetration among pastoralist occupied parts of Kenya's elephant range.	5.5.2 Review and trial mechanisms for facilitating pastoralist entry into the cash economy (converting cows to cash or other forms of saving) that are acceptable and can be supported by pastoralists.	End of 2015	KWS, research organisations, relevant ministries	Published results from review and trials
	5.5.3 Design a livestock support tool kit appropriate for pastoralists (water, drought intervention, veterinary support, predator management and compensation for loss of livestock to elephants)	End of 2016	KWS, relevant stakeholders/partners, large-scale ranches and conservancies, research organisations, relevant ministries	Published tool kit
	5.5.4 Establish a pastoralist outreach support programme for unprotected elephant range areas occupied by pastoralists incorporating each of the previous components (rangeland rehabilitation, livestock marketing and livestock support). Ensure this programme is coupled with elephant conservation.	End of 2017	KWS, relevant stakeholders/partners, development organisations, relevant ministries	Number of conservation areas within the elephant range taking up pastoralist support programme, number of households involved
5.6 Potential for elephant compatible enterprise options understood and supported.	5.6.1 Review progress of the USAID funded Laikipia Wildlife Forum bio-enterprise project in north Kenya and other similar projects in East and Southern Africa to establish the real potential for conservation compatible enterprise options (such as honey, harvesting of natural resins etc.) in elephant range areas.	End of 2016	KWS, research organisations, relevant stakeholders/partners	Published report, identified potential nature based enterprises and their viability
	5.6.2 Support implementation of viable conservation compatible enterprise options.	From 2016	KWS, relevant stakeholders/partners	Number of areas and projects implemented and assessed on periodic basis

[TABLE 11] Incentives strategic objective targets, actions, timelines, actors and indicators

Important assumptions:

- 1 Government adopts recommendations in revised policy and legislation.
- 2 Communities remain supportive of wildlife.
- 3 Local and regional political stability.
- 4 Tourism continues to at least existing levels.
- 5 Sufficient government and donor financial support for adequate community conservancy development and rangeland support activities.

3.3.6 Capacity

[BELOW] Plate 38.

Dr. Dominic Mijele, KWS vet darting an elephant from a KWS helicopter in Narok, Mara Ecosystem
- Charles Ooro, Kenya Wildlife Service

Sustain an effective resource capacity through collaborative efforts among stakeholders with a strategic focus on priority areas.



Rationale and considerations

There is always a question as to when capacity is sufficient. The answer is always dependent on the context and circumstances. Resources are to some extent limiting and will need to be adjusted according to priorities. In the case of the elephant in Kenya, the current global increase in demand for ivory requires that there is an increase in capacity to deal with the increasing threat. Additionally, the increasing conflict from elephants and human population growth paradoxically requires a greater capacity to mitigate this. Improved capacity is required to ensure the distribution and movements of elephants are in harmony with a national plan in land use, human population settlement and economic activity and will involve many players. The capacity should, however, be proportionate to the needs in each area. No more, no less. Appropriate capacity will improve the situation on the ground and ensure objectives are reached e.g. in reducing ivory demand, destroying ivory supply chains, deterrence on the ground, law enforcement, improved monitoring, reduced conflict and should be balanced.

Overall cost/benefit for the various components of the strategic plan should be assessed and measures taken to increase efficiency and prioritisation to ensure key targets are reached. Improved capacity is required both in terms of human resources and improved skills and equipment. An aspect of capacity is political and there is the need for a communication strategy to ensure sufficient emphasis is placed by the government and society on elephant conservation, and in harnessing its value for Kenyans and the international community.

A clear plan will be required to ensure necessary funds are available to implement the strategy effectively. Ideas for developing an endowment fund for elephant conservation are in line with the KWS 2005–2010 Strategic Plan, which advocates for a KWS (Endowment) Fund as was envisaged in Section 5A of the Wildlife (Conservation and Wildlife) (Amendment) Act. Once it is set up, the funding of specific elephant conservation activities can be designated to this fund. This would provide predictability in budgeting and the implementation of planned activities, and address the long-term financial sustainability issue. A significant contribution should also come from the finances of the private and county council lands where a significant percentage of elephants exist. Communities are beginning to also take an interest in elephant conservation and may provide significant opportunities in the future. Donor agencies are urged to continue to support the strategic aims of the elephant programme, especially for activities outside of the normal budgeting of KWS, and for emergencies. International and national NGOs have been, and will continue to be, important stakeholders and providers of technical and financial support; it is important that they operate in a

transparent manner, to avoid the potential for charges from bystanders of inter-agency rivalry and intrigue. Technical support and research are encouraged from both national and international agencies to enhance the outputs of the programme, and their programmes should be well co-ordinated.

Target	Action	Timeline	Actors	Indicators
6.1 Human capacity for effective strategy implementation.	6.1.1 Conduct review of staffing levels and training needs on periodic basis through KWS regional management; Identify minimum staffing levels for each elephant conservation area.	2012-2021	KWS, relevant stakeholders / partners	Report on needs assessment produced and circulated to decision-making framework
	6.1.2 Rationalise KWS staff related to elephant conservation and develop Terms of Reference for staff in key positions; review on regular basis.	2012 - ongoing	KWS	- Number of staff redeployed - Proportion of staff in key positions (related to elephant conservation) with Terms of Reference
	6.1.3 Recruit necessary personnel as identified and maintain staffing levels at least at identified level.	Ongoing	KWS	- Number of recruited rangers, technical and community program staff in place - Staff strengths in elephant conservation levels
	6.1.4 Institutionalise elephant security, monitoring and community interface focussed ranger based modular training at KWS Manyani Field Training School and technical training at KWS Naivasha Training Institute.	2012-2013	KWS, relevant stakeholders / partners	Number of staff trained on an annual basis in targeted elements
	6.1.5 Ensure/conduct targeted training as specified in this strategy document and identified in needs assessments; review progress.	2012-2021	KWS, conservation and research organisations	Number of training programs conducted and reviewed
	6.1.6 Institutionalise skilled staff retention in relevant positions through KWS regional management and HR department.	2012-2021	KWS	Levels of skilled staff turnover
	6.1.7 Ensure at least 75% of the ranger force is available for daily security surveillance in the elephant conservation areas.	2012-2021	KWS	Monthly patrol reports showing effective staff levels
	6.1.8 Build capacity of judiciary and police to effectively enforce laws on elephants and other wildlife.	2012-2021	KWS	Number of training programs, reports
6.2 Necessary tools for effective security, research, monitoring, management, HEC resolution and community engagement.	6.2.1 Conduct equipment needs assessment on periodic basis through KWS regional management.	2012-2021	KWS, relevant stakeholders	Report on needs assessment produced and circulated to decision-making framework
	6.2.2 Procure and provide necessary equipment, with assessment of condition of equipment and replacement on timely basis.	Ongoing	KWS, relevant stakeholders/ partners	Proportion/Number of required equipment procured and provided on a time manner (e.g. monitoring and surveillance equipment)

Target	Action	Timeline	Actors	Indicators
6.3 Appropriate and adequate infrastructure for strategy implementation.	6.3.1 Conduct needs assessment with review on periodic basis through KWS regional management.	2012-2021	KWS, relevant stakeholders / partners	Needs assessment report produced and circulated to decision-making framework
	6.3.2 Undertake feasibility studies and EIA as appropriate.	Ongoing	KWS, relevant stakeholders / partners	EIA and feasibility study reports produced and circulated to decision-making framework and relevant stakeholders
	6.3.3 Construct / provide necessary infrastructure on a timely manner.	Ongoing	KWS, relevant stakeholders / partners	Number / length of roads, offices, education centres, outposts, fence, communication systems etc. established on a timely manner
6.4 At least 25% of the cost of elephant conservation is covered by new sources of conservation finance by 2021.	6.4.1 Assess potential of carbon credit (REDD) and incipient biodiversity credit markets for generating finance for the conservation of elephants and elephant habitat.	End of 2013	KWS, conservation NGOs, private sector and donors	Published report and number of recommendations adopted and implemented
	6.4.2 Explore options for private and public company sponsorship of specific elephant conservation areas as part of corporate social responsibility branding (such as Virgin, Kenya Airways, Tusker etc.).	End of 2016	KWS, relevant stakeholders / partners, private and public companies	Published report and recommendations adopted and implemented, number of areas including community conservancies receiving private and public support
	6.4.3 Explore options for private sector partnerships for co-managed and conservation of protected and unprotected parts of the elephant range.	End of 2016	KWS, relevant stakeholders / partners, private sector organisations, donors and investors	Published report and recommendations adopted and implemented, number of co-managed entities
	6.4.4 Establish an international endowment fund for conservation payments to custodians of elephant range areas.	End of 2021	Independent board of trustees, KWS and donors	Endowment fund established, trustees appointed, funds accrued, amount paid out to custodians & database developed and functional
	6.4.5 Finance secured from each of the previous components to cover elephant conservation costs.	End of 2021	KWS, relevant stakeholders / partners	Finance received by all conservation organisations, programs supported
6.5 Innovative approaches for raising funds for elephant conservation and management implemented by 2021.	6.5.1 Host an annual meeting for the most successful international businessmen and entrepreneurs 'Entrepreneurs for Elephants'. This will be held in Kenya's most exclusive and beautiful wildlife areas to brain-storm on raising finance for effectively implementing elephant conservation programmes in the modern world.	Annually but first one in 2013	KWS, global businessmen	- Meeting proceedings - Number of ideas adopted and implemented, amount of funds raised

[TABLE 12] Capacity strategic objective targets, actions, timelines, actors and indicators

Important assumptions:

- 1 Regional and global financial stability.
- 2 Trained staff remains in place.
- 3 Equipment and infrastructure maintained properly.
- 4 Government and donor financial support continues and is increased.

3.3.7 Coordination and Support

[BELOW] Plate 39.

KWS veterinary team taking tissue samples during a collaring exercise - Charles Ooro, Kenya Wildlife Service

Implement an effective coordination framework to support stakeholders and enhance decision making and action.

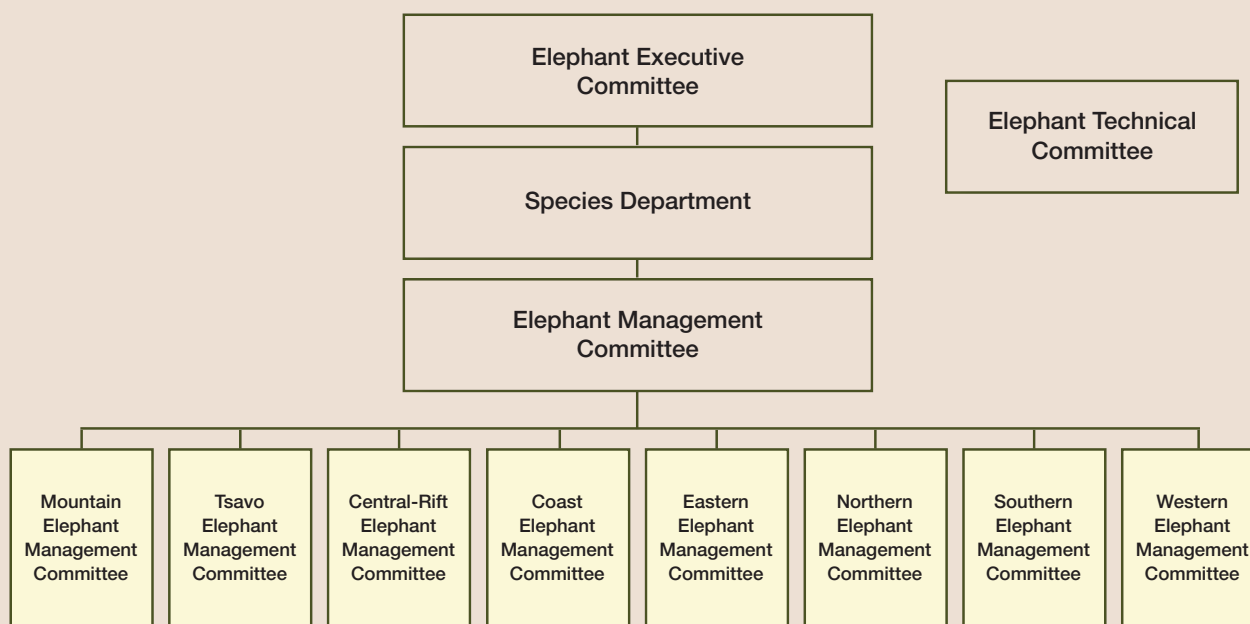


Rationale and considerations

The conservation and management of wildlife in Kenya is vested in KWS, a parastatal organisation under the Ministry of Forestry and Wildlife. It is charged with the implementation of the Wildlife Policy (1975) and the Wildlife Act (revised in 1989) and general planning and management of wildlife in Kenya. KWS will therefore be responsible for the implementation and monitoring of this Elephant Conservation and Management Strategy. However, a wide range of stakeholders have interest in, and resources available for, elephant conservation and management in Kenya. Thus, to achieve the overall goals of this strategy, all stakeholders (private sector, NGO partners, donors, relevant county councils and communities) will be required to work together under a well-coordinated and managed system.

With the KWS Strategic Plan 2005–2010, considerable authority has been devolved to Area Managers. This is an important step forward in improving action at the local level, but emphasises the need for coordination at the national level. In addition, several key elephant population ranges straddle the boundaries of different KWS Conservation Areas, so managers of adjacent areas must have coordinated approaches. An extension of this point is the fact that a number of elephant population ranges also cross international boundaries, primarily with Tanzania and to a lesser extent with Uganda, Somalia, Sudan and Ethiopia. Therefore, coordination of policies and strategies is needed. Where harmonisation is not possible, the agreement of boundary 'buffer zones' is important in the management of elephant range, and in elephant protection and anti-poaching activities, including discussion and joint international action on issues of ivory trade and trafficking. It would be useful to consider enlisting the support of conflict-resolution specialists to assist with negotiations, where disagreement may occur over subjects such as the ivory trade.

The coordination framework must therefore be carefully considered so that it will be effective, efficient and inclusive (Figure 17). The strategy requires buy-in from all concerned, but it will be the activities that will determine its success. Drivers for the practical aspects of the strategy are the ones that need to be well established and sustained. The committees shall only be as large as necessary to achieve the purpose, shall only meet as required and shall be focused on action. Much of the coordination shall be done through a strong network, with regular communication. Sufficient resources need to be applied to the coordination process to ensure it works effectively and capacity also needs to be sufficient to function at a National level.



[FIGURE 18] The sustained framework for decision making and information flow through area level committees to national committees with involvement of all elephant stakeholders.

Target	Action	Timeline	Actors	Indicators
7.1 A well coordinated and managed framework for supporting stakeholders and enhancing decision making and action.	7.1.1 Establish Elephant Executive Committee (EEC) operating from clear Terms of Reference (ToR) (Annex 1.1).	2012	KWS (Species Department)	- Committee established - Meetings held as per ToR; minutes of meetings documented and circulated - Proportion of recommendations / issues decided; decisions implemented
	7.1.2 Establish Elephant Technical Committee (ETC) operating from clear ToR (Annex 1.2).	2012	KWS (Species Department)	- Committee established - Meetings held as per ToR; minutes of meetings documented and circulated - Number of key issues discussed, concluded and recommendations made
	7.1.3 Establish Elephant Management Committee (EMC) operating from clear ToR (Annex 1.3).	2012	KWS (Species Department)	- Committee established - Meetings held as per ToR; minutes of meetings documented and circulated
	7.1.4 Establish KWS Area Elephant Management Committees operating from clear ToR (Annex 1.4).	2012	KWS (regional Assistant Directors)	- Committees established - Meetings held as per ToR; minutes of meetings documented and circulated

Target	Action	Timeline	Actors	Indicators
7.1 A well coordinated and managed framework for supporting stakeholders and enhancing decision making and action.	7.1.5 Implement structures and reporting lines for all components of the National Elephant Programme.	2012	KWS, relevant stakeholders	- Structures and reporting lines - Reports and minutes reduced and circulated to relevant stakeholders
	7.1.6 Coordinate harmonisation of Wildlife Policy with other development sectors in governmental and non-governmental circles to secure elephant habitat.	2012-2016	KWS, relevant ministries	- Number of meetings held - Proportion of land use decisions (tourism lodges, settlement programmes etc) with wildlife taken into account
	7.1.7 Hold trans-boundary meetings involving all concerned stakeholders at least annually.	Annual from 2012	KWS, regional State wildlife authorities, relevant stakeholders	- Number of meetings held - Minutes documented and circulated
	7.1.8 Coordinate harmonisation of policies and strategies with neighbouring countries and where not possible, initiate agreement of boundary 'buffer zones' for the management of elephant range, elephant protection and anti-poaching activities.	2012-2021	KWS, regional State wildlife authorities and ministries	Common policies, strategies and where necessary trans-boundary buffer zones
	7.1.9 Coordinate joint international action on issues of ivory trade and trafficking.	2012-2021	KWS, State wildlife authorities and ministries, conservation organisations	Number of joint statements, documents, actions etc
	7.1.10 Coordinate and produce KWS regional elephant status reports, synthesise national report and communicate back to each elephant conservation area as appropriate and recognising the multi-year census cycles.	2012 onwards	KWS Elephant Programme Office and Regional Offices	Regional status reports produced and synthesised into national status report and disseminated to regional stakeholders
	7.1.11 Coordinate transparent donor and targeted technical support and research activities with national and international agencies to enhance outputs of the conservation programme.	2012-2021	KWS, relevant stakeholders/partners, research organisations	Project research and funding proposals and reports reviewed by ETC and disseminated to relevant stakeholders on a timely manner
	7.1.12 Encourage and support improved capacity and increased activity of NEMA in controlling the environmental impact of developments in elephant distribution range.	2012-2021	KWS, NEMA	Increasing involvement of NEMA in controlling environmental impact of developments.
	7.1.13 Publish relevant articles on elephant activities in journals and media on a timely basis.	Ongoing	KWS, relevant stakeholders/partners	Number of coverage/publications through media and journals
	7.1.14 Accessible online searchable database to which anyone working on elephants in the country would be required to contribute.	2012 - ongoing	KWS and relevant stakeholders and partners	Database populated and reviewed regularly.

Target	Action	Timeline	Actors	Indicators
7.2 Conservation and Management Strategy for Elephants implemented nationally.	7.2.1 Develop annual work-plan for implementation at the start of the financial year (including budget, actions and responsibilities) and review by the ETC.	2012 onwards	KWS, relevant stakeholders/partners	Annual work-plan including budget produced and circulated to decision-making framework and donors
	7.2.2 Identify and ensure funding required for all essential activities for the year is available from the start of the financial year.	Annual from 2012	KWS, relevant stakeholders/partners	Funding identified and in place
	7.2.3 Explore a range of revenue generating opportunities and support.	Ongoing	KWS, relevant stakeholders/partners, conservation and development organisations	- Number of initiatives, proposals etc. - Amount of funds generated
	7.2.4 Conduct biannual review of progress in implementation of strategy.	Every 2 years from 2013	KWS (ETC)	Evaluation reports produced and circulated
	7.2.5 Develop and implement awareness programs targeting schools, local communities, policy makers, NGOs, business sectors etc.	Ongoing	KWS	Number and effectiveness of awareness programs (annual basis)
	7.2.6 Develop and implement a communication and information sharing strategy to stakeholders.	2012	KWS	Strategy developed and operational
	7.2.7 Develop a clear sustainable financial plan (e.g. as component of planned KWS endowment fund) for implementing key components of the strategy and for achieving long term financial sustainability for elephant conservation to supplement the established Elephant Research Fund.	2012 and updated on regular basis	KWS, relevant stakeholders/partners, conservation and development organisations	- Financial plan developed, approved by EEC and in place - Increasing allocation of funds from KWS/ central government, endowment fund - Number of fundraising events, funded research projects etc.

[TABLE 13] Coordination and Support strategic objective targets, actions, timelines, actors and indicators

Important assumptions:

- 1 Political stability in regional countries.
- 2 Regional and global financial stability.
- 3 Government and donor financial support continues and is increased.

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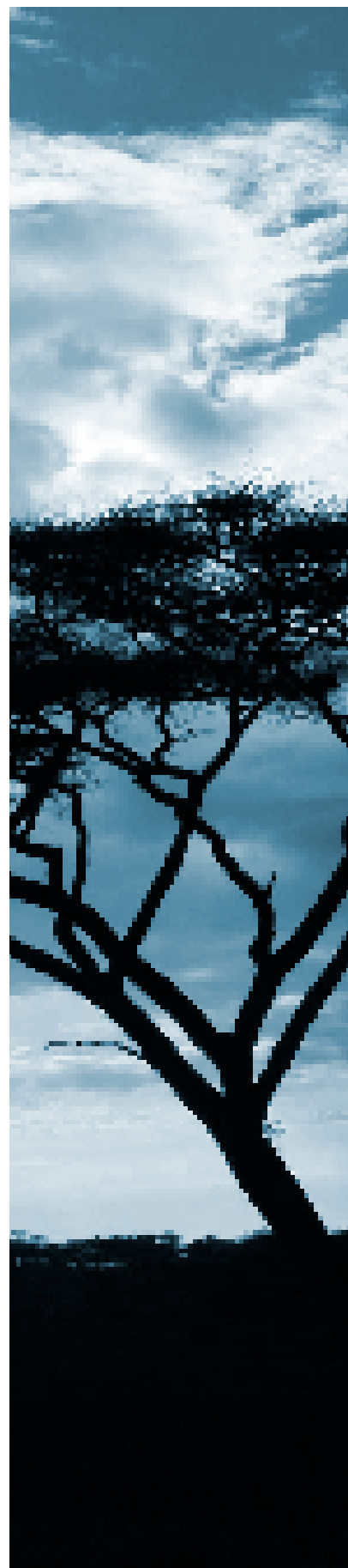
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[RIGHT] Plate 40.

Elephants rip off whole branches, chewing leaves, thorns, twigs, even the wood in the branch itself.



Annex 1 Terms of Reference for Elephant Management Committees

Annex 1.1 Elephant Executive Committee (EEC)

Chairman: Director, KWS

Secretary: Elephant Programme Coordinator (EPC)

Composition: Director, DD-WCS, DD-S, DD-BRM, DD-FA, DD-CS, H-HC, H-Vet, H-SCM, EPC

Status: Executive Committee

Overall Mandate:

Assume overall executive responsibility for elephant conservation and management in Kenya. The committee will meet at least twice a year, ideally within 2 weeks after the second quarter of the ETC meeting. The committee can also be called upon when need arises.

Specific Duties:

- i. Ratify major technical decisions concerned with conservation and management.
- ii. Develop and implement elephant policy.
- iii. Ensure the successful implementation of all required actions.
- iv. Advice on sourcing of funds.
- v. Monitor funding, expenditure and effectiveness

Annex 1.2 Elephant Technical Committee (ETC)

Chairman: H-SCM

Secretary: EPC

Composition: To be composed by persons with expertise in different fields and appointed by the Director KWS.

Status: Advisory committee

Overall Mandate:

To advise the Elephant Executive Committee, through the coordinating office, on technical matters pertaining to elephant protection and management and provide a conclusive way forward on issues raised. Establish a sustained link between regional management and ETC through the coordinating office.

Specific duties:

- i. Evaluate implications of technical recommendations before implementation.
- ii. Develop intervention protocols.
- iii. Set survey and monitoring standards and procedures, and evaluate their implementation and effectiveness.
- iv. Review all elephant conservation, management and research proposals for funding.
- v. Fund raise for elephant conservation and management, and implementation of the strategy.
- vi. Review and report on the implementation of the strategy.

Annex 1.3 Elephant Management Committee (EMC)

Chairman: DD-WCS (or DD-BRM)

Secretary: EPC

Composition: To be appointed by the chairman.

Status: Management Committee

Overall Mandate:

Review and make appropriate recommendations on the management of elephant populations in the country. The committee will meet on quarterly basis, and ideally before the ETC and the EEC. Meetings will be encouraged to take place at different elephant conservation sites on a rotational basis.

Specific duties:

- i. Review management of elephant and make appropriate recommendations based on advice from the ETC.
- ii. Discuss and recommend on security issues.
- iii. Prioritise funding needs and advice the ETC and donors.
- iv. Update elephant population status and distribution.
- v. Report on progress of strategy implementation at site level.
- vi. Coordinate cross-border conservation initiatives.

Annex 1.4 Area Management Committee (AMC)

Chairman: Area Assistant Director

Secretary: Area Senior Scientist

Composition: Area Assistant Director, Park Senior Warden, District Warden, Research Scientist, Security officers (in county council area, it will be constituted by the District Warden, Research Scientist, Community and County Council representatives). Where elephant populations cross Conservation Areas, neighbouring areas will be represented on each other's committees. Similarly, where a Conservation Area borders Elephant Range Country, a representative from the neighbouring country's wildlife authority will be invited on to the Committee.

Status: Site Management Committee – this will include those areas that include multiple parks, reserves, community areas etc.

Overall Mandate:

To address elephant security and management issues within its mandate, and where it's unable to then forward to ETC through coordinating office. To coordinate in the implementation of decisions made by EEC in collaboration with EMC and coordinating office.

Specific duties:

- i. Ensure implementation of annual work plans.
- ii. Ensure adequate allocation of monitoring resources.
- iii. Coordinate the link and working relations of research, security and community services.

Annex 2: List of participants of the final strategic workshop

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