WWF SPECIES ACTION PLAN

African Elephant

2007-2011

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Peter J. Stephenson

Front cover photo: African savanna elephant herd on the move in Amboseli National Park, Kenya. The female in the middle has exceptionally long tusks.
Back cover photo: Male African forest elephant in early morning mist, Dzanga-Ndoki National Park, Central African Republic.

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CONTENTS

1. EXECUTIVE SUMMARY

The African elephant is found in 37 countries across the continent. Populations in many areas were severely reduced in the latter half of the twentieth century primarily through legal and illegal hunting. Some populations, especially in southern and eastern Africa, have shown signs of recovery in the last decade or so, but many populations, especially those in west and central Africa, remain highly at risk. The main threats facing elephants across their range are poaching for ivory and meat, the loss, deterioration and fragmentation of their habitat, and human-elephant conflict (HEC).

In 2000, WWF established an African Elephant Programme to address the threats facing elephants through targeted field projects. From 2001 to 2006 this programme supported projects that, among other things, helped: to train more than 420 African professionals from 18 range states in elephant management; to establish a new national park (Quirimbas, Mozambique) and provide survey data for three other proposed new protected areas (Cameroon); to increase anti-poaching efforts around 10 protected areas; to develop and test HEC mitigation methods and train local people in communities in six countries; to establish elephant monitoring and census programmes in six sites across central Africa; to develop two national and two sub-regional elephant management strategies; to develop capacity for range states to implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora and its monitoring systems (MIKE and ETIS); to conduct studies into domestic ivory markets in six African states and further highlight the importance of such domestic markets in fuelling the illegal international trade. In several countries where WWF supported elephant work populations have increased (e.g. Kenya, Tanzania, and South Africa).

This document represents WWF's second Species Action Plan (SAP) for African elephants and covers the five-year period 2007-2011. It is a framework for WWF's support for elephant conservation throughout Africa. It builds on lessons learned from the first phase of the programme (2001-2006).

VISION:
In 25 years time, forest and savanna elephants continue to roam across Africa in landscapes where people and wildlife flourish alongside each other.

GOAL:
By 2017, elephant populations and their habitat cover are stable or increasing in 20 landscapes.

OBJECTIVES:
1.1 The development and application of policies and legislation that create an enabling environment for elephant conservation facilitated in 13 range states by 2011
2.1 Elephant habitat conserved effectively in order to increase range and connectivity between populations (including transboundary populations) in 14 landscapes by 2011
3.1 Illegal killing of elephants reduced by at least 30% in 12 landscapes by 2011
3.2 Illegal trade in major elephant product markets reduced by at least 50% in 9 African states and two Asian states by 2011
4.1 Human-elephant conflict reduced by at least 40% in pilot sites in 18 landscapes by 2011
4.2 The livelihoods of people living alongside elephants are improved through economic development activities linked to wildlife conservation in 20 landscapes by 2011
5.1 Public support for, and participation in, elephant conservation increased in 20 landscapes by 2011 through increased awareness of policies, laws, options and benefits

The document outlines the key activities required to attain the programme's objectives. The action plan will be implemented through a portfolio of projects developed by WWF field programmes and their partners. These projects will be focused on priority landscapes which include:

Rank	Priority Landscapes and Range states
Central Africa	
1	TRIDOM - Trinational Park of Dja, Odzala, Minkebe Cameroon, Republic of Congo, Gabon
2	Sangha Trinational Cameroon, Central African Republic, Republic of Congo
3	Gamba complex Gabon
4	Salonga Democratic Republic of Congo
5	Maiko - Kahuzi-Biega Democratic Republic of Congo
Eastern Africa	
1	Selous

	Tanzania	
2	Mara - Serengeti	
	Kenya, Tanzania	
3	Ruaha - Rungwa	
	Tanzania	
4	Tarangire – Lake Manyara	
	Tanzania	
5	Shimba Hills	
	Kenya	
Southern Africa		
1	Northern Mozambique	
	Mozambique	
2	North-west Namibia	
	Namibia	
3	Kavango-Zambezi	
	Angola, Namibia, Botswana, Zimbabwe, Zambia	
4	Luangwa Valley	
	Zambia	
5	Greater Limpopo	
	South Africa, Zimbabwe, Mozambique	
West Africa		
1	Tai - Grebo	
	Côte d'Ivoire-Liberia	
2	Park W - Eastern Burkina Reserves - Pendjari Park - northern Togo Reserves	
	Burkina Faso, Benin, Niger, Togo	
3	Nazinga -Kabore Tambi NP - Red Volta- Doungh	
	Burkina Faso, Ghana, Togo	
4	Gourma - Sahel	
	Mali, Burkina Faso	
5	Bia - Goaso - Djambarakrou	
	Ghana, Côte d'Ivoire	

In addition to work in these landscapes, WWF and TRAFFIC (WWF's joint wildlife trade programme with IUCN) will tackle elephant trade issues in the following African states: Angola, Cameroon, Central African Republic, Côte d'Ivoire, Democratic Republic of Congo, Mozambique, Nigeria, Senegal, and Sudan. We will also support work to reduce illegal trade in Asian consumer states, such as China and Japan.

In order to implement the action plan, WWF aims to work with range state governments and their relevant natural resource management authorities (such as wildlife departments, national parks authorities, regional and district staff, etc.). We will also work with other stakeholders in elephant conservation, particularly local communities living side by side with elephants, national and international non-governmental organizations (NGOs), research institutions, and key elements of the private sector (especially logging and tourism companies). Throughout its elephant work, WWF will emphasise capacity building

initiatives which aim to empower Africans to manage their own elephant populations for broader biodiversity conservation and sustainable development needs.

The African elephant SAP will be implemented through an African Elephant Programme managed by a co-ordinator. An African Elephant Working Group will ensure WWF Network input into AEP strategic plannng and fund-raising.

It is estimated that the implementation of this plan will cost around 12 million Swiss francs.

2. INTRODUCTION

The African elephant (*Loxodonta africana*) was among the first recognized flagship species, providing a focus for raising awareness and stimulating action and funding for broader conservation efforts (Leader-Williams & Dublin 2000). Its role as a flagship species is helped by the fact it is one of the most well known of all wild animals worldwide, and closely associated with African biodiversity and wilderness. However, the African elephant poses a huge challenge for conservationists.

In some parts of its range, the African elephant survives only in small, fragmented populations in tiny "islands" of forest in a "sea" of agriculture and human settlement; in other parts of its range it is thriving with population increases exceeding 7 percent per annum. In some places the species is perceived as a huge asset for local, national and international economies. There is demand for elephant ivory, hide and meat. Elephants are also an important source of revenue through tourism (Brown & Henry 1993; Goodwin & Leader-Williams 2000): many people are prepared to pay large sums of money either to watch and photograph them in the wild, or to hunt them for sport. However, people living alongside elephants run many risks and can become victims to elephant crop raiding, or to attack. Elephants are therefore often seen as a pest and a threat to local livelihoods.

Elephants play an important "keystone" ecological role in savanna and forest ecosystems, helping to maintain suitable habitats for a myriad of other species. Yet when their dispersal is blocked by human activity, local population increases can cause damage to their own habitat.

Overall, it is clear that an African continent that can house healthy populations of elephants is likely to preserve many other species of fauna and flora that share the same habitats. Given the wide expanses of land required to conserve elephants, the species also emphasizes many of the ideas of ecoregion conservation and landscape design being promoted in Africa. Therefore, a future for elephants should mean a future for much of the biodiversity in Africa (Stephenson 2004). Nonetheless, as human populations grow and their demand for natural resources increases, a complex set of threats to elephants and their habitats have to be tackled simultaneously and extensively if elephants are to roam across the African continent for much longer.

2.1 BIOLOGY OF THE AFRICAN ELEPHANT

The African elephant is the largest living land mammal. (For a full account of the species and other proboscideans see e.g. Laursen & Bekoff 1978; Spinage 1994; Kingdon 1997; Nowak 1999; Sukumar 2003). Adult males reach up to 4 m in shoulder height, and weigh up to 7,500 kg. Along with Asian elephants, African elephants are the only surviving members of the mammalian family Elephantidae in the order Proboscidea. They are distinguished from other large mammals by having a nose extended into a trunk, large ears, and upper incisor teeth that develop into tusks in male and female African elephants (and male Asian elephants). Related species such as mammoths and mastodons died out thousands of years ago.

Elephants feed on a variety of plant matter, especially grass, leaves, fruit and bark. They can consume up to five percent of their body mass (i.e. up to 300 kg) in 24 hours, and drink about 225 litres of water a day.

The central social unit in elephant society is the mother and her offspring. Matriarchal family groups often interact with other groups to form clans. Males leave these clans when they reach 10-14 years of age to live alone or with other males.

African elephants can breed all year round though there is a slight peak in births in the rainy season, at least in savanna elephants. Females generally conceive from the age of eight years, though they are receptive (in oestrus) for only a few days every few years.

Gestation lasts 650-660 days and leads to one (and very rarely two) young. They can often survive on solid food within two years, though stay close to their mothers for up to ten years. African elephants are thought to live up to about 65 years in the wild.

Recent research has confirmed that elephants are highly sentient and intelligent mammals and share a number of behavioural traits with apes and dolphins. Wild and captive elephants have been known to engage in tool use (see e.g. Chevalier-Skolnikoff & Liska 1993; Hart *et al.* 2001). Social structure within elephant populations is complex and multi-layered (e.g. Wittemyer *et al.* 2005), and communication within and between social groups involves tactile, chemical and vocal means (e.g. Langbauer 2000; McComb *et al.* 2000, 2003; Poole *et al.* 2005). Elephants are among the very few animals that can recognize themselves in mirrors, a trait probably linked to their complex sociality and co-operation (Plotnik *et al.* 2006). They show concern for distressed and dead individuals, and render assistance to ailing conspecifics (Douglas-Hamilton et al. 2006); this has been interpreted as compassionate behaviour.

Traditionally, two subspecies of African elephant have been recognized: the African savanna (or bush) elephant (*Loxodonta africana africana*) and the African forest elephant (*Loxodonta africana cyclotis*). As their names imply, they inhabit different habitats: the bush elephant is generally found in savanna and woodland environments, whilst the forest elephant occurs in dense tropical forest. Morphologically, the forest elephant is generally smaller in size than the savanna subspecies, has more oval-shaped ears and straighter, downward pointing tusks. There are also differences in the size and shape of the skull and skeleton. Behavioural differences, besides habitat use, include diet and social organization. The forest elephant is much more of a browser and a frugivore (i.e. it feeds more on leaves and fruit); the savanna elephant more often grazes on grass. Forest elephants live in smaller social groups of two to four individuals compared with 4-14 in bush elephant herds; it appears that bull forest elephants tend to be solitary whereas the savanna bulls associate more with herds.

Some genetic studies (e.g. Roca *et al.* 2001; Comstock *et al.* 2002) suggest that the two subspecies of African elephant are two distinct

species, but the evidence is equivocal (Debruyne 2005). The IUCN/SSC African Elephant Specialist Group (AfESG) believes that premature allocation into more than one species may leave hybrids in an uncertain conservation status (AfESG 2003). WWF therefore continues to follow the guidance of the Specialist Group and will consider both as subspecies. However, for conservation pur- poses, each will be considered separately, since threats facing forest elephants appear to be greater than those facing the savanna sub- species.

The African elephant once inhabited most of the continent, from the Mediterranean coast to the tip of South Africa. It is adapted to many habitat types and occurs in the moist forests of west Africa, the dense rain forests of the Congo Basin, the woodlands, forests and acacia-savanna grasslands of the Indian Ocean coast, and arid semi-desert zones in Namibia and Mali.

African elephants, being "keystone species" in most of their habitats, directly influence tree diversity and density, forest structure, and the wider landscape (see e.g. Wing & Buss 1970; Western 1989; Sheil & Salim 2004; Mtui & Owen-Smith 2006). In tropical forests, elephants create clearings and gaps in the canopy that allow tree regeneration and provide habitats for gap-specialized species (Kortland 1984); they also affect the cover and distribution of miombo and acacia woodlands (Mapaure & Campbell 2002; Skarpe *et al.* 2004). In savanna ecosystems elephants can maintain species diversity by reducing bush cover and creating an environment favourable to a mix of browsing and grazing animals (Western 1989).

Some tropical tree species may be dependent on elephants for seed dispersal and seedling germination and establishment (Alexandre 1978, Chapman *et al*. 1992; Hawthorne & Parren 2000, Theuerkauf *et al.* 2000; Waithaka 2001; Cochrane 2003; Goheen *et al.* 2004). In west African forests, up to 30 percent of tree species may require elephants to help dispersal and germination (Alexandre 1978). The decline of some forest trees is therefore expected if elephants are lost from the habitat (e.g. Hall & Swaine 1981, Cochrane 2003); this may have happened already in some forests in central Africa (Maisels *et al*. 2001). In contrast, where elephants occur in high densities, their reduction of tree cover might

affect other species in the habitat (de Beer *et al.* 2006), causing a potential decline in species diversity. Even where elephants do not affect vegetation cover at a landscape level, increased numbers can be correlated with a decline in other mammalian herbivores (Valeix *et al.* 2007).

Although young elephants may be predated by large carnivores such as lion (Joubert 2006; Loveridge *et al.* 2006), it is probable that humans have been the only serious threat to the species in recent times. Humans have also greatly shaped the modern-day distribution and abundance of elephants across their range.

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2.2 THE HISTORY OF AFRICAN ELEPHANT EXPLOITATION AND POPULATION DECLINE

Ivory has long been a marketable commodity and has been worked and traded for thousands of years; the earliest ivory sculptures date back more than 30,000 years (Conard 2003). Early hominids exploited proboscideans (elephants and their ancestors) for at least 1.8 million years (Surovell *et al.* 2005).

Hunting for ivory, and loss of habitat through human cultivation and settlement, has threatened elephant populations for centuries.

During Roman times until 217 BC African elephants in the north were domesticated for military purposes (Laursen & Bekoff 1978) but the species was eliminated from north of the Sahara by about the sixth century AD (Meester & Setzer 1977), or possibly earlier (Spinage 1994). Ivory has been traded from eastern Africa since Roman times, with a further expansion in the trade from AD 1000, leading to an apparent peak in the mid nineteenth century (see Hakansson 2004). In southern and west Africa elephant numbers were dramatically reduced in the eighteenth and nineteenth centuries as Europeans settled the continent, expanding the trading routes and increasing the demand for timber and ivory. The west African trade in ivory during the seventeenth century "brought about such a swift decline in the number of elephants in the coastal zone that the trade itself had begun to decline by the beginning of the eighteenth century" (Fage 1969).

In the twentieth century, Africa's human population continued to expand. Over the last 25 years, the number of people in Africa has risen from 478,824,000 in 1980 to 905,936,000 in 2005 (UNEP 2006a). By 2031, there will probably be nearly 1.5 billion people on the continent.

Africa has many of the world's poorest nations, and human development across the continent (as measured by the Human Development Index covering dimensions of income, education and health) is the lowest in the world. Over the last decade the HDI has been rising across all developing regions except sub-Saharan Africa (UNDP 2005). The majority of Africans are still reliant on agriculture as the primary source of food and revenue. This has caused an ever increasing demand on natural resources and land, further reducing the area available to elephants and other wildlife.

Throughout much of the twentieth century the hunting of African elephants for their ivory (both legal and increasingly illegal) continued to decimate populations. Elephants were hit particularly hard in the 1980s when an estimated 100,000 individuals were being killed per year and up to 80 percent of herds were lost in some regions (Eltringham & Malpas 1980; Douglas-Hamilton 1987; Cobb & Western 1989; Merz & Hoppe-Dominik 1991; Alers *et al.* 1992; WWF 1997, 1998).

Most of the ivory sold in the 1980s went to the Far East, but after Japan the USA was the largest single importer, with a retail ivory trade worth US$ 100 million per year (Thomsen 1988). The sharp decline in elephant numbers in Africa caused an international outcry. In 1989 many importing countries imposed their own legislation to stop the importation of raw ivory, and in 1989 the African elephant was placed on Appendix I of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora). This prevented international trade in ivory and other elephant products. This ban was imposed in an attempt to cut off supply to the markets.

In Africa anti-poaching efforts were augmented where the means were available. Although poaching never completely stopped, elephant numbers recovered in many countries (see below). However, in many parts of the continent, the problems have not gone away.

Accurate historical data on population levels are difficult to obtain. Some estimates suggest there may have been several million African elephants at the start of the twentieth century (Milner-Gulland & Beddington 1993); numbers may have declined from 3-5 million in the 1930s and 1940s and, after severe poaching in the 1970s and 1980s, possibly fewer than 400,000 remained in the early 1990s (Douglas-Hamilton *et al.* 1992; Said *et al.* 1995).

In spite of this overall continental decline, elephants made a remarkable comeback throughout much of their southern African range during the last century (Blanc *et al.* 2003). Partly as a result of these population increases, three southern African states (Botswana, Namibia, Zimbabwe) received permission from CITES to conduct a one-off sale of some of their ivory stocks in 1999; permission for a second sale from three states (Botswana, Namibia, South Africa) was also approved in 2002, although by the end of 2006 all the conditions had not yet been met for that to go ahead.

2.3 CURRENT ELEPHANT POPULATION LEVELS AND CONSERVATION STATUS

Population Status

African elephants now occur in 37 countries (or range states - see Annex 3 for list). The data available for elephant population esti-

mates is very variable in quality and in geographical coverage (see Blanc *et al.* 2007). Of the land believed to be elephant range (3.3 million square kilometres), elephant population data is only available for 51% of the area. Although for some sites there are accurate data from regular aerial counts or dung counts, other population estimates are based merely on guesses. Due to the variation in data coverage and quality, estimating precise elephant numbers and determining population trends is very difficult. However, at the time of the last continent wide assessment in early 2007, it was calculated that the African elephant population is at least 472,269, and probably 554,973 (Blanc *et al.* 2007); is it possible that numbers may exceed 685,000 (see Annex 3). Although no differentiation is made in the status report between subspecies, it is estimated that one quarter to one third of the total numbers are forest elephants. However, continued poaching in central Africa (Blake *et al.* 2007), may mean this figure is much lower.

Although a direct comparison between different years' data is complex, there is some evidence that the elephant populations across eastern and southern Africa are increasing (Blanc *et al.* 2005). Forty-one out of 51 sites compared in the region showed higher elephant population estimates in the 2002 dataset (Blanc *et al.* 2003) than in the 1998 dataset (Barnes *et al.* 1999), and across these sites in eastern and southern Africa there was a recorded increase in population estimate of 25 percent (Blanc *et al.* 2005). The latest status report (Blanc *et al.* 2007) shows that the minimum number of elephants (figures considered "definite") across the whole continent has increased by 70,200 since 2002, largely due to increases in eastern and southern Africa.

Although these analyses are encouraging, concern remains for many elephant herds. In eastern Africa, the viability of some populations, especially those in Eritrea, Ethiopia, Rwanda, Somalia and parts of Uganda, is uncertain (Blanc *et al.* 2007). In west and central Africa population estimates are based largely on old data or guesses (Blanc *et al.* 2003, Blake & Hedges 2004). However, it is clear that in west Africa only some 35 isolated populations remain in fragmented forest habitats; only 11 of the 35 populations are thought to contain 100 or more elephants (Blanc *et al.* 2003; IUCN 2003a; Blake & Hedges 2004). Mauritania (at the end of the

1980s) was the last African state to lose its elephants (see Barnes 1999). Today several west African elephant populations are precarious: Senegal cannot confirm more than one animal, and Togo four (Blanc *et al.* 2007); the future for the 4-10 elephants in Guinea Bissau is "bleak" (Brugière *et al.* 2006). Côte d'Ivoire was named for its abundance of elephants but the population appears to have been declining with poaching evident in many protected areas, and particularly rampant in Comoé, the largest park in the sub-region (Schulenberg *et al.* 1999; Fischer 2005). Overall, the future for elephants in this sub-region may lie only in a small network of well-protected parks and reserves (Barnes 1999).

In central Africa, little is known of many populations deep in the Congo Basin. Under the dense canopy, populations can only be censused through dung counts (Barnes 1993). Although this method is potentially very accurate (see Barnes 2001), it remains a logistical challenge in many remote parts of the range. Nonetheless, recent survey data suggests that elephant poaching remains rampant in many parts of central Africa (Blake & Hedges 2004; Blake *et al.* 2007), and the sub-region provides much of the illegal ivory being traded elsewhere on the continent and beyond (see below).

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Conservation Status

In its Red List of Threatened Species (IUCN 2006), the World Conservation Union considers the African elephant to be Vulnerable. This means that the species faces "a high risk of extinction in the wild in the medium-term future". This category was chosen in spite of the sub-regional population variations because there was overall an inferred population decline of at least 20 percent over three generations (75 years). It was also felt that some of the major causes of

population decline, such as habitat loss, have not ceased and may not be reversible (see the African elephant species information at http://www.iucnredlist.org/). This does indeed seem to be the case, as many of the threats facing elephants today are the same as they have been for decades (WWF 1997).

Although the IUCN Red List assessment was conducted at the species level, not at the sub-species level, forest elephants appear to be more threatened than savanna elephants since poaching appears to be more prevalent in forest habitats (see below).

2.4 CURRENT ISSUES IN ELEPHANT CONSERVATION

Poaching

A certain amount of legal killing of elephants occurs each year, mostly through trophy hunting (where sport hunters pay a license fee to take a number of game species), and problem animal control (where wildlife authorities shoot animals causing damage to people and property). However, throughout large parts of their range, African elephants are still hunted illegally, often to provide ivory for the illegal international trade. Much of the illegal poaching today occurs in the forests of central Africa: poached elephant carcasses are found "routinely" in many parks in the sub-region (Blake & Hedges 2004).

The limited resources available to wildlife departments, combined with the remoteness and inaccessibility of much of the forest in elephant range, makes it difficult for governments to monitor and protect their herds. The problem is compounded by the unstable political situation in some range states, and where conflict occurs (such as in the Democratic Republic of Congo, DRC) armed militias often hide in the elephant's forest habitat (Draulans & Krunkelsven 2002). The broader environmental impacts of war include the over-exploitation of natural resources for subsistence and commercial purposes, leading to habitat destruction and increased hunting (Shambaugh *et al.* 2001). A correlation has been shown between political instability and the lack of representative governments and reduced elephant population growth rates (McPherson & Nieswiadomy 2000).

Elephants represent a source of wild meat to people in several range states (see e.g. Barnett

2000, Eves & Ruggiero 2000). Extractive industries that operate in forests compound poaching. For example, logging can directly or indirectly facilitate commercial hunting for the bushmeat trade (see e.g. Auzel & Wilkie 2000; Wilkie *et al.* 2001). Income from the sale of elephant meat, as well as ivory, can provide significant revenue for small rural villages. For example, in the Republic of Congo, the sale of meat and tusks from each elephant hunted is worth about US$400 profit for the villagers, with some villages making more than US$2,000 per month from elephants (Eves & Ruggiero 2000). Anecdotal evidence from the field suggests many elephants across central Africa are being hunted for their meat, but the scale of this problem has not yet been determined.

The level of protection afforded elephants is correlated with elephant population density (UNEP 1989). However, many range states do not have adequate financial or human resources to protect their elephants, conduct regular population counts, or to enforce legislation on the illegal trade in elephant products. Essential management information on population trends, distribution and poaching levels is currently not available for many parts of the continent.

The inadequate capacity of range states to protect their elephants is demonstrated by the lack of available financial and human resources, both of which have been shown to affect conservation success (e.g. Leader-Williams & Albon 1988).

Overall operating budgets for protected areas are frequently inadequate; adequate, long-term and secure funding is absent from at least 75 percent of Africa's forest parks (Struhsaker *et al.* 2005). For example, in parks in DRC in 2002 budgets were as little as US$6.9 per km^2 per annum, when at least US$50 was probably required (Mubalama & Bashige 2006) and (judging by estimates in the 1980s) more than US$200 would probably have been more appropriate (Leader-Williams 1994). Consequently, park guards in DRC are paid very low wages (in 2004 the equivalent of US$2 per month), which are frequently not delivered for months at a time (Stephenson & Newby 1997; Blake & Hedges 2004).

Staffing levels are too low in many protected areas important for elephants. It has been suggested traditionally that staffing levels

should be between about one person per 20 km² to one person in 50 km² for effective conservation of large mammals (Bell & Clarke 1984). In the last few years this level has not being attained in elephant range states like DRC: in Kahuzi-Biega National Park there is one guard per 72 km² (Mubalama & Bashige 2006), in Salonga National Park one staff member per 205 km² (Blake & Hedges 2004), and in the Okapi Wildlife Reserve there was only one guard for every 352 km² (Stephenson & Newby 1997). These small numbers of staff are poorly equipped and their transport and infrastructure are inadequate. Similar situations can be found across Africa. Even the wealthiest state in central Africa, Gabon, makes available only limited resources to manage areas with large elephant populations (Blake & Hedges 2004).

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In the last five years, the CITES Programme for Monitoring the Illegal Killing of Elephants (MIKE) has helped develop the capacity of a number of range states to census and monitor elephant populations and to measure the rates and causes of mortality. Baseline data has been produced for target sites using standardized data collection protocols. Nonetheless, many range states still need assistance in censusing their elephants, monitoring threats and illegal killing, and in developing reliable national or sub-regional databases for use in managing national populations.

Elephant management skills need to be developed and implemented across the range of the African elephant. Such skills should be made available not only to government management authorities but also to private game conservancies and community-managed wildlife areas that will be managing elephant herds and on whom the survival of the elephants will increasingly come to depend.

Illegal Trade

Since the global CITES trade ban took effect in 1990, there have been conflicting views about its impact on the ivory trade. The immediate result was an apparent reduction in illicit trade and a decline in the scale of certain key ivory markets. For example, ivory sales dropped markedly in Europe, North America and Japan (Martin & Stiles 2003, 2005). At the same time, background levels of poaching in Africa continued (see e.g. Dublin *et al.* 1995; Martin & Stiles 2000). Ongoing demand for ivory, as well as for wild meat, has maintained hunting pressures on many African elephant populations to the present day.

The CITES Secretariat, monitors ivory trade through ETIS (the Elephant Trade Information System), which is managed by TRAFFIC, the joint wildlife trade monitoring programme of WWF and IUCN. The central feature of ETIS is a database holding the world's largest collection of ivory seizure records. CITES Parties are obliged to report all elephant product seizures to TRAFFIC for inclusion in ETIS, but within Africa not all seizures appear to be reported. The lack of response mostly relates to deficiencies in internal capacity, structure and understanding (T. Milliken, personal communication). There is a need to promote better understanding about the requirements of ETIS and to support the development of national-level data collection protocols.

Ivory is still in demand in the Far East; for example, ivory seals, or *hankos,* are still prized in Japan. Two successive analyses of the ETIS data have demonstrated that new demand for ivory in China stands behinds a steadily increasing trend in illicit trade since 1995. With astonishing economic growth and a growing commercial presence in Africa that includes involvement in ivory trade, China is a sig-

nificant influence on international ivory trade (T. Milliken, personal communication).

On the other hand, analysis of ETIS data fail to provide evidence that the one-off ivory sale permitted by CITES in 1999 affected rates of poaching or illegal trade (Stiles 2004). To the contrary, the ETIS data demonstrate that illicit trade in ivory statistically correlates most strongly with the presence of large-scale, unregulated domestic ivory markets in many African and Asian countries.

Recent trade studies continue to show that there are still thriving domestic ivory markets in many African elephant range states (including Angola, Côte d'Ivoire, Mozambique and Nigeria), as well as in countries such as Egypt, Ethiopia, Senegal and Sudan that have no wild elephants or very few wild elephants (Martin & Stiles 2000; Courouble *et al*. 2003; Martin 2005; Martin & Milliken 2005; Milliken *et al*. 2006). Much of the ivory in these domestic markets originates from central Africa, with key source countries including Cameroon, the Central African Republic (CAR) and DRC. Following documentation of the trade by TRAFFIC, Save The Elephants and others, and pressure from CITES meetings, some degree of market suppression has been noted in places such as Ethiopia and Mozambique (Milledge & Abdi 2005; Milliken *et al*. 2006). Even though some markets, such as the one in Egypt, have declined in size in recent years (Martin & Milliken 2005), some markets, such as the ones in Angola and Sudan, appear to be growing (Martin 2005; Milliken *et al.* 2006).

Overall, it has been estimated that carvers servicing the unregulated ivory markets around the world consume the tusks from up to 12,249 African elephants each year (Hunter *et al*. 2004). The ivory in Africa's markets - usually derived from illegal sources and illegal international trade - often continues on an illegal path around the globe. It is transported by either individual travellers or commercial traders, and often ends up in Asia (in places such as China, Japan and Thailand), the USA and Europe (e.g. Martin & Stiles 2002; Courouble *et al*. 2003; Martin 2005). China, however, remains the major driver of the increasing global trend in the illicit ivory trade (Milliken *et al*. 2004).

African governments have acknowledged the problem of unregulated domestic ivory markets. At the thirteenth meeting of the Conference of the Parties to CITES in October 2004, all African elephant range States approved (in Decision 13.26) an "action plan for the control of trade in African elephant ivory" which commits them:

- to prohibit unregulated domestic sale of ivory, whether raw, semi-worked, or worked
- to instruct all law enforcement and border control agencies to enforce such laws
- to engage in public awareness campaigns to publicize these prohibitions.

Many countries require support in implementing the agreed plan. In fact, ivory trade dynamics remain poorly understood in most African countries with flourishing markets and law enforcement and awareness-raising activities need to be expanded. Ivory trade studies and ongoing monitoring are vital components supporting implementation of the CITES action plan.

New techniques have been developed to identify the DNA of seized ivory and use it to determine the place of origin (see e.g. Comstock *et al*. 2003; Wasser *et al*. 2004). However, such modern techniques are still largely unavailable to law enforcers in most range states, partly because of their high cost.

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Habitat Destruction and Range Reduction

African elephants have less room to live in than ever before (Stephenson 2004). There is a continuing decline in the extent and quality of their habitat as expanding human populations convert land for agriculture, settlement and development activities (see e.g. Parker & Graham 1989; Thouless 1999). Conversion of habitat for plantations for biofuels is an increasing problem. Extractive industries such as logging and mining also cause habitat destruction and improve accessibility of remote forests to hunters (Wilkie *et al*. 2001).

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Many forest areas in west and central Africa are in decline (see e.g. Sayer *et al*. 1992, Myers *et al*. 2000). Root causes of forest loss include the long history of commercial logging, human population growth, poverty, armed conflict and population displacement (Minnemeyer & Selig 2004). Savanna and woodland habitats of bush elephants face similar threats.

In total, elephant range has declined from 7.3 million square kilometres in 1979 to 3.3 million square kilometres in 2007 (Blanc *et al*. 2007). Of the remaining range, at least 70 percent falls outside protected areas.

Elephants can coexist with people at various levels of human activity, but it seems that once a threshold of human population density has been reached (for example, 15.6 people/km^2 in a savanna study area in Zimbabwe) elephants disappear (Hoare & du Toit 1999). This means that land clearing by an expanding human population may result in a non-reversible decline in elephant density.

Habitat loss and deterioration in habitat is occurring throughout elephant range. An assessment of threats to ecoregions with key elephant habitat types is presented in Annex 4.

Protected areas are becoming increasingly isolated and elephants increasingly confined within their borders, as the animals' traditional seasonal migratory routes are cut off. The fact that protected areas systems are likely to be amongst the last secure refuges for elephants means that management for broader bio-diversity goals and law enforcement within the protected areas will have to be improved as many today do not provide adequate management or protection (see e.g. Bruner *et al*. 2001; Struhsaker *et al*. 2005).

Before it is too late, new protected areas need to be created in elephant habitat wherever possible. This is especially important in central Africa, particularly in DRC, where the majority of the more threatened forest elephants are found. In addition, elephant range outside protected areas needs to be taken into consideration during land-use planning such that human use becomes more compatible with wildlife. Extractive industries need to be engaged, as well as local communities, with the aim of ensuring sustainable forest management (SFM) outside of protected areas. Certification schemes such as FSC (the Forest Stewardship Council) are starting to develop in Africa and offer one mechanism to ensure SFM.

Fragmentation of remaining habitats is also problematic as it reduces genetic flow between wildlife populations. Roads traversing forest blocks further exacerbate fragmentation and increase access for poachers (Laurance *et al*. 2006; Blake *et al*. 2007). In all habitat types, corridors are required to provide connectivity between elephant populations; in at least one case, connectivity across national boundaries also helped reduce the impacts of civil war on elephant populations (Plumptre *et al*. 2007b). Recent research (Damschen *et al*. 2006) suggests that habitat patches connected by corridors will also retain more native plant species, enhancing overall biodiversity conservation. Corridors can be protected areas, or multiple use zones managed for human needs as well as elephant movements. Many corridors, especially those in the very fragmented forests of west Africa and coastal east Africa, will require initiatives for forest landscape restoration (see Mansourian *et al*. 2005).

Various forms of community-based wildlife management can provide direct revenue to local communities and provide added incentives to maintain elephants and their habitats as well as other wildlife (see e.g. Taylor 1994, WWF 2006). Community-based natural resource management (CBNRM) schemes have helped conserve elephant populations in several parts of southern Africa, with the CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) and LIFE (Living in a Finite Environment) programmes being two examples. Such CBNRM schemes are now expanding in eastern Africa. For example, Wildlife Management Areas (WMAs) are being developed in Tanzania, and in some parts of Kenya community associations are

exploring alternatives to cultivation that conserve remaining forest whilst generating benefits from the forest and its wildlife (Sitati *et al.* 2003). However, the policy and legislative enabling environment for implementing CBNRM is not always present in elephant range states.

WWF has a long history of experience with protected areas, sustainable forest management and forest landscape restoration (see e.g. Dudley *et al.* 2005, Mansourian *et al.* 2005). The African Elephant Programme will therefore work very closely with forest projects and WWF forest staff to conserve elephant habitat.

Forest conservation tools and approaches developed by WWF and its partners (e.g. Hocking *et al.* 2000; Ervin 2003) will be used in elephant habitat. For example, the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology, protected area management effectiveness framework, and the WWF/World Bank tracking tool will be used to monitor progress and effectiveness within elephant reserves.

Forest conservation initiatives need to better value forests goods and services and better monitor the return of forest functions at landscape level (Mansourian & Dudley 2005). Frequently a large number of people benefit directly from the environmental goods and services provided by forests, but the burden of responsibility for finding resources to conserve these forests has rested with just a handful of stakeholders, namely government forest and wildlife agencies and non-governmental conservation organizations. "One major reason why it has proved so difficult to halt and reverse global forest loss is that those who manage forests typically receive little or no compensation for the services that these forests generate for others and hence have little incentive to conserve them" (Dudley & Stolton 2003).

One solution is to implement schemes that provide Payment for Environmental Services. These ensure that end users of the forest, its goods and services contribute to the conservation of the very resources they depend upon. It is increasingly being suggested that we should "bundle" environmental services together (e.g. carbon sequestration, water shed protection, biodiversity, tourism value) and sell the whole package as an incentive for sust-

ainable forest management (Schuyt 2005). Therefore, the end users to be targeted are diverse and include (but are not limited to) logging companies, mining companies, water companies, hydroelectricity power generating companies, infrastructure development companies, and agricultural enterprises.

Climate change is one of the main emerging threats facing biodiversity and, in tropical hotspots, it may lead to higher rates of species extinctions than deforestation (Malcolm *et al.* 2006). It is no longer safe to assume that all of a species' historic range remains suitable, so conservation efforts need to consider climate change in all aspects of *in situ* conservation (McCarty 2001). Conservation strategies that plan further into the future and explicitly address the potential effects of climate change are required (Hannah *et al.* 2002). Habitat loss and fragmentation, already a problem across elephant range, will have a secondary effect of hampering the ability of species to disperse to new climatically suitable areas (Thomas *et al.* 2004). The selection of any new protected areas also needs to take account of potential long-term changes brought about by a changing climate (Araujo *et al.* 2004).

As a result of the added threat of climate change to elephants and their habitat, early in the implementation of conservation actions in this plan climate vulnerability assessments will be conducted for elephant populations in Africa using available assessment tools (see Hannah 2003). The results will be used to develop and implement climate change adaptation strategies for elephant landscapes identified as being at high risk.

Human-Elephant Conflict

Human-elephant conflict (HEC) has existed for a long time: elephants may have limited agricultural development in equatorial forests for centuries (Barnes 1996) and HEC was recorded in Africa early in the twentieth century (e.g. Schweitzer 1922). Although trends are difficult to ascertain, (Kangwana 1995), there is some evidence that HEC is a growing problem and that the costs of dealing with "problem animals" are increasing (Omondi *et al.* 2004). HEC has become one of the biggest issues facing elephant conservationists today (Stephenson 2004).

HEC can take many forms (see Hoare 2000). The most common is the direct killing of

elephants by people. However, elephants also cause many problems for people living alongside them: they enter fields where they eat and trample crops, they raid food stores, and they damage village infrastructure including water sources. Their presence in or around settlements can also disrupt community life, stopping transit along roads or preventing children from attending school. In some cases where there is direct confrontation, they occasionally injure or kill people.

Over recent years, our understanding of HEC has improved. Many crop varieties are fed on or damaged by elephants, but common ones include maize, millet, bananas, sweet potatoes, sorghum, beans, cassava, cotton, groundnuts, cashew nuts, mangos, melons, sunflowers (Hoare 1999a, Chiyo *et al*. 2005, Malima *et al*. 2004). It appears elephants often search out ripe crops, even when wild forage is available (Chiyo *et al*. 2005). Males have generally been associated with taking higher risks in foraging and for being involved in most crop raiding, but in many sites family groups are also involved (see e.g. Hoare 1999a, Sitati *et al*. 2003).

There are differences in the temporal and spatial patterns of HEC between sites, but some general trends include the fact that it often occurs between dusk and dawn, is often seasonal, and conflict is often highest in areas close to protected areas that act as elephant refuges (see e.g. Hoare 1999a, 2000; Parker & Osborn 2001). The lunar cycle and rainfall patterns may also affect elephant foraging and HEC (Barnes *et al.* 2006).

Since an elephant can eat up to 300 kg of food a day, even a small herd can wipe out a farmer's annual crop in one night's foraging. Other wildlife pests such as primates, rodents, suiids (boars and pigs), birds and insects cause more frequent damage than elephants, and may cause greater total crop damage over time (e.g. Naughton-Treves 1998; Naughton *et al*. 1999, Gillingham & Lee 2003). Livestock losses to lions can have a greater financial impact on farmers than crop losses to elephants (O'Connell-Rodwell *et al*. 2000). Nonetheless, elephant damage is often localized and therefore more destructive in a relatively small area. Elephants are also generally less tolerated by villagers than other pests because they are dangerous and because a lot of time and effort is spent trying to keep them out of fields (Naughton *et al*. 1999; Hoare 2001).

In some instances, HEC becomes more serious and marauding animals sometimes kill people. For example, around eastern Selous in Tanzania, when two people were killed by elephants within a 12 month period, 25 elephants were killed by people in retaliation (Malima *et al*. 2004). In an area of Transmara District, Kenya, 35 people were killed by elephants between 1986 and 2000 (Sitati *et al*. 2003). In such instances wildlife authorities are obliged to take action to control problem animals, with a result that many elephants are shot – indeed, selective shooting "has been widely employed throughout Africa as the main method of control" (Hoare 1995). In spite of potential short-term mitigation effects, and appeasement of affected communities, evidence suggests that shooting problem elephants has little effect on crop-raiding (see e.g. Bell 1984).

The problem of HEC is exacerbated by the fact that, after the population crashes in the 1970s and 1980s due to rampant poaching, elephant populations are now increasing in several ranges states (Blanc *et al*. 2005). Much of their former range is now being used by expanding human population for agriculture and settlement (Myers 1993). Therefore, when elephants try to follow traditional migration corridors through what was once forest, woodland or savanna, they are confronted with roads, fields, and villages. Some 30 percent of elephant range may fall within protected areas (Blanc *et al*. 2007). However, even parks and reserves can be inadequate to stop conflict since some elephants have home ranges much larger than the protected area they live in (e.g. Blake 2002; Galanti *et al*. 2006) and many individuals spend large amounts of time (up to 80 percent) foraging in surrounding land (Nzooh *et al*. 2005).

WWF identified HEC as a major issue affecting elephant conservation (WWF 1997) and supported a number of HEC initiatives in the late 1990s. This work included providing grants to the IUCN/SSC African Elephant Specialist Group to develop important new tools for tackling HEC - a standard monitoring protocol and a Decision-Support System (Hoare 1999b, 2001). Since 2001 a number of projects have been established or supported by WWF to tackle HEC, to use standard monitoring protocols and the DSS, and to develop and test new mitigation measures (see Stephenson 2005). Successful methods have then been replicated at other sites.

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Traditional methods of keeping elephants out of fields include guarding, erecting barriers, and scaring elephants with lights, noise and smoke (Hoare 1995, 2001; Nelson *et al*. 2003; Osborn & Parker 2003). They have met with mixed success. Electric fencing – erected either around protected areas to keep elephant in, or around fields to keep elephants out – is a more effective method of keeping elephants and people apart. However, the system is not guaranteed to succeed and the cost of such a barrier is prohibitive to most communities and parks authorities in Africa (see Nelson *et al*. 2003).

Recent experiments using chilli-based deterrents, for example applying chilli-oil mixtures to rope barriers or burning elephant dung mixed with chilli, have proven particularly successful (e.g. Osborn 2002; Osborn & Parker 2002; Stephenson 2005; Sitati & Walpole 2006). The advantages to such techniques are that they are easily applied using relatively cheap, locally available materials. Where farmers have planted chilli for use on elephant barriers, they also have an opportunity for income generation from selling their new crop.

Elephants can habituate to many deterrents (e.g. Tchamba 1996; Osborn & Parker 2002).

Therefore, a shifting combination of simple methods may be a successful short-term approach (Hoare 2001, Sitati *et al*. 2003), especially if they are focused on early detection, increased guarding and the use of active deterrents as well as passive, chilli-based barrier methods (Sitati *et al*. 2005; Sitati & Walpole 2006).

In spite of local successes in keeping elephants out of fields and villages, "if rural people continue to practice agriculture in habitats shared with elephants, it is likely that conflicts with elephants cannot be eradicated, only reduced" (O'Connell-Rodwell *et al*. 2000). In some areas there is also evidence that success in mitigating HEC has led farmers to increase the area under cultivation (Sitati & Walpole 2006).

Ultimately, only integrated land-use planning can solve HEC problems in the long-term (Osborn & Parker 2002; Lee & Graham 2006), accompanied by incentives to conserve natural wildlife habitat (Sitati & Walpole 2006). At the national level, such planning needs to ensure adequate room for elephants and the setting aside of migration corridors; at the local level this can involve improved ori-entation of farmers' fields so that they avoid planting close to the forest edge and plant in blocks. Blocks of fields will also facilitate shared guarding among community members. Buffer zones planted with crops that are less attractive to elephants (e.g. chilli, tea, coffee and tobacco) can also be considered (Osborn & Parker 2002; Chiyo *et al*. 2005).

Overall, efforts must be doubled to help mitigate HEC and to empower people living near the animals to make informed decisions on the choices available to mitigate or minimize the risk of conflict. Efforts also need to be made to develop programmes for the national "vertically integrated" management of HEC that not only concentrate on field-level mitigation measures but also encompasses relevant higher-level policy issues such as compensation, land use planning, land tenure, and equitable benefit sharing. This will entail engaging with a much broader set of stakeholders than occurs at present (for example, in addition to the environment sector, development, agriculture and finance sectors of government must consider HEC in decision-making processes on land-use planning).

The Landscape Approach to Conservation and Transfrontier Collaboration in Elephant Management

In the last decade, conservationists have recognized the need to conserve biodiversity at larger scales than before, to ensure representative samples of the world's main habitat types are preserved along with ecosystem processes (Mittermeier *et al.* 1998; Olson & Dinerstein 1998). Many conservation programmes now focus on whole ecoregions and landscapes rather than isolated sites. Given the size of elephant range and the large amount of unprotected elephant habitat, over the coming decade elephant conservation must be re-oriented towards conserving and managing populations across broader "landscapes" (Stephenson 2004).

Using large, multi-use landscapes as a strategy to conserve mammals is an approach increase-ingly advocated to take into account the integrity and function of ecosystems and other elements of biodiversity, as well as the target taxa (see e.g. Noss *et al*. 1996; Entwistle & Dunstone 2000; Linnell *et al*. 2000). Elephant landscapes should include a network of protected areas covering a representative sample of elephant habitat types. These core areas need to be surrounded by buffer zones and linked by corridors that allow migration and gene flow between populations. These buffers zones and corridors will not necessarily be pristine habitat but at least their land use should be sustainable and "elephant-friendly" and some parts should be community-managed so that local people benefit directly in some way from the habitat and its wildlife. Further-more, the planning of all new corridors should take into account ways of reducing HEC.

The elephant landscapes need to be established and consolidated in the next 10-15 years before it is too late and before too much habitat has been lost (Stephenson 2004). Time is running out in key ecoregions such as Guinean Moist Forests and East African Coastal Forests, and in some parts of Africa the opportunity for creating corridors may have been lost already (see e.g. Newmark 1996).

Conservation of very large tracts of land poses new challenges to conservationists. Land use planning over such large scales requires cross-sectoral collaboration. Where transfrontier populations are being conserved, cross-border collaboration requires additional efforts to secure long-term political will and to harm-onize approaches, policies and legislation (van der Linde *et al.* 2001). Recently elephant range states have taken moves to develop such collaboration specifically for elephant conservation. A series of "range states dialogues" have been organized and neigh-bouring countries have developed sub-regional elephant management strategies. These strategies, prepared by wildlife managers, scientists and other stakeholders, can provide the basis for collaboration.

Already a number of transboundary or transfrontier programmes are being developed. For example, at the Yaoundé summit in 1999, central African governments committed to protect and manage sustainably their forests and to work on transboundary initiatives. Since then, progress has been made towards estab-lishing the Sangha Trinational Park between Cameroon, the Central African Republic and the Republic of Congo, and a Transborder Conservation Initiative to link the forests of Dja (Cameroon), Minkebe (Gabon) and Odzala (Congo) (referred to as the TRIDOM land-scape). A joint conservation plan ensures protection of core areas and sustainable forest management and "conservation-friendly" land uses in surrounding zones. Along with other landscapes these initiatives are supported by the Congo Basin Forest Partnership (see Kamdem-Toham *et al.* 2003). In southern Africa, Transfrontier Conservation Areas (TFCAs) are being established, often as Peace Parks (see e.g. Hanks, 2000). The largest, the Kavango-Zambezi TFCA, covers the core area of the largest population of elephants in the world.

More efforts need to be initiated along similar lines, taking in to account regional and sub-regional, rather than just national, conservation priorities. Certainly the Congo Basin is a large enough wilderness area that existing trans-boundary initiatives could be built on to estab-lish other new "megaparks" (Stephenson 2004). There is much potential to build on existing protected areas within the Miombo and Baikiaea Woodlands, and opportunities also exist in west Africa to link remaining blocks of Guinean Moist Forest that traverse national boundaries (Parren *et al.* 2002). In every case, efforts need to be made to involve key stakeholders such as private enterprise and local communities.

Enabling Environment for Elephant Management - Policy and Capacity

Although many range states have legislation protecting elephants and banning illegal trade in ivory and elephant products, many laws need updating. Many governments also need support to develop their capacity to enforce these laws, especially relating to poaching and ivory trade.

"Policies that authorize local communities to benefit financially from the revenue generated within protected areas have been very successful in raising community support for the protected areas" (Ntiamoa-Baidu *et al*. 2000). Nonetheless, many states still do not have legislation or land tenure systems that easily permit community-based wildlife management.

One of the first steps a range state government can make in developing a suitable policy for elephant management is to develop a management plan or strategy. In recent years national elephant management strategies have been developed or updated for a number of range states including:

- Benin (Ministère de l'Agriculture, de l'Elevage et de la Pêche 2005)
- Botswana (DG Ecological Consulting 2003)
- Burkina Faso (Ministère de l'Environnement et du cadre de Vie 2003)
- Cameroon (Ministry of Environment and Forestry 2000)
- Côte d'Ivoire (Ministère des Eaux et Forêts 2004)
- Ghana (Wildlife Division 2000)
- Mozambique (Ministry of Agriculture and Rural Development 1999) and northern Mozambique (Ministry of Agriculture and Rural Development 2005)
- Namibia (Ministry of Environment and Tourism 2005)
- Niger (Direction de la Faune, de la Pêche et de la Pisciculture 2004)
- Tanzania (Wildlife Division 2001)
- Togo (Ministère de l'Environnement et des Ressources Forestières 2003)
- Zambia (Ministry of Tourism, Environment and Natural Resources 2003).

These national plans complement sub-regional strategies developed for west Africa (IUCN 2003a,b), central Africa (IUCN 2005) and southern Africa (Taylor in prep). In each case the government wildlife departments have consulted stakeholders to identify strategic priorities. However, several of these plans have yet to be officially ratified or published, and many of them fail to identify geographical priorities. Few elephant management plans are being put in to practice in anything more than a piecemeal way, largely due to resource constraints.

Local Over-population and Related Management Options

In some parts of southern and eastern Africa elephant populations that are well protected are increasing in size. When these growing populations are unable to disperse (either because their former range has been converted to farms and human settlement or because their protected area has been fenced to keep them in) a situation of "local over-population" occurs. A growing population that cannot disperse starts to cause excessive damage to its habitat, and can reduce the availability of forage and water for elephants and other wildlife (see summary in van Aarde and Jackson 2007). There is also the possibility of increased human-elephant conflict as elephants force their way into neighbouring farms and settlements in search of food.

Options available to wildlife management authorities to tackle local over-population are quite limited (WWF 1997; van Aarde & Jackson 2007). They include:

- expanding range by increasing the size of protected areas and linking protected areas with corridors to allow elephant dispersal
- moving elephants to sites with more space through translocation
- reducing birth rates through the administration of contraceptive drugs to sexually mature individuals (a technique still largely in the experimental phase – see e.g. Delsink *et al.* 2006)
- reducing numbers through culling
- doing nothing.

The local over-population of elephants is a growing issue. In Kruger National Park in South Africa regular culls used to be conducted to keep elephant numbers down, but since this culling was stopped in 1995 the elephant population has almost doubled (Cumming & Jones 2005). Problems caused by growing elephant numbers include tree loss,

and damage to fencing. Buffaloes escaping through elephant-created holes have caused foot and mouth disease in local farmers, threatening livelihoods. As a result of these problems, the national parks authority (SANParks) is considering a resumption of culling. This has sparked a long and heated debate within the country and beyond.

In Kenya, elephants in Shimba Hills National Park are thriving but they are now damaging their coastal forest habitat. Three hundred animals are being moved to the much larger Tsavo National Park around 350 km away to reduce the immediate pressure (P. Omondi, personal communication). However, this operation is costing around US$ 8,000 per elephant. Not all countries can afford such a wildlife translocation operation, and questions arise about how to stop the Shimba population growing again in coming years.

It is clear that each option open to range states has its advantages and disadvantages. Any final decisions must take account of overall conservation goals for a given site, as well as local value systems (see Cumming & Jones, 2005, for a review of the issues).

Since local over-population is likely to increase, and because of the contentious nature of several of the management options for tackling over-population (especially culling), the issue is likely to require a lot of time and consideration by wildlife managers across the continent in coming years. Decision-makers need to be aware of the issues and have information and tools at hand to make informed and appropriate choices. The IUCN/SSC AfESG has produced a set of technical guidelines to help elephant managers way up the options and methods for translocation (Dublin & Niskanen 2003). A similar set of guidelines is being finalized for dealing with local over-population in general. Such technical support needs to be built upon and expanded.

Socio-economic Considerations in Elephant Management

Many conservationists recognize that, in order to address problems and threats facing elephants, solutions need to integrate the needs of the people, as well as the elephants (see e.g. Lee & Graham 2006). Many people see wildlife as a resource to be exploited and, with a high dependence on natural resources, Africans often have few alternatives. Nonethe-

less, in principle, if natural resource use is sustainable both people and wildlife can benefit in the long term.

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Given that elephants can be both dangerous and destructive many people are not comfortable living alongside them. However, when perceived as an asset, elephant conservation can become a locally developed and integrated approach to land use (Taylor 1994). This may in turn counter negative perceptions and promote greater tolerance of HEC.

Local and national economies can benefit from the presence of elephants directly in numerous ways. CBNRM schemes may allow limited off-take of elephants or other wildlife at sustainable levels that promote wildlife as a land use and provide direct revenue to local people. Tourism can bring in revenue from people prepared to pay to view elephants, their habitats and other wildlife. Trophy hunting is a form of consumptive use that can also be of benefit if managed properly. Consumptive and non-consumptive tourism also has knock on effects for the economy in terms of job creation, and the provision of goods and services. Although tourism is often seen as a panacea to Africa's wildlife management problems, care needs to be paid to ensure it does not have adverse impacts on wildlife, habitats and local

people (see e.g. Roe *et al*. 1997)

In addition to direct benefits, many indirect benefits accrue to people preserving elephants. Elephants are keystone species and their role as habitat engineers and in tree seed dispersal and germination means they are integral to the long-term survival of healthy ecosystems that benefit people as well as wildlife.

WWF therefore advocates that all elephant conservation work needs to take account of local interests, values and livelihoods. Efforts will be made to empower people to manage their own resources and to provide incentives for wildlife conservation through schemes such as CBNRM, eco-tourism and sustainable forest management.

Sub-regional Differences in Elephant Threats, Status and Management

The four sub-regions in sub-Saharan Africa (central, eastern, southern, west) differ considerably in vegetation and human density. Elephants also vary in habitat use in each sub-region. In much of central Africa, elephants occur primarily in forest habitats. In east and southern Africa they occur primarily in flooded grasslands, savannas and miombo woodlands, though some populations also inhabit coastal forests.

The distribution and abundance of elephants varies between sub-regions due to habitat types and differing levels of threat. For example, elephant populations in southern Africa are much larger and more stable than the small, declining and fragmented populations in west Africa. Whereas Botswana probably has at least 150,000 elephants, only two west African range states have populations larger than 1,000 (Blanc *et al*. 2007). West African populations suffer from forest conversion and poaching, whereas many of the southern African populations have a much larger range available. Savanna elephants in eastern Africa are generally relatively well studied populations residing largely in protected areas - in central Africa, forest elephants are poorly known and large numbers occur outside protected areas.

Current evidence suggests that west and central African populations are probably either stable or declining, whereas many in southern and eastern Africa are either stable or increaseing (Blake & Hedges 2004; Blanc *et al*. 2005; Blanc *et al*. 2007). Local over-population is an

issue of concern for several southern African states, but it is not even discussed in west and central Africa!

Conservation strategies need to take into account these sub-regional differences and apply approaches and methods best suited to the local context.

3. DEVELOPING WWF'S AFRICAN ELEPHANT PROGRAMME (2007-11): BUILDING ON LESSONS LEARNT

WWF has supported elephant conservation since the organization was established. From 1962 to 2000, a number of its projects specifically targeted elephants, such as those financed by the WWF African Elephant Conservation Fund (e.g. mitigating human-elephant conflict in Gabon; development of an elephant conservation strategy for west Africa and for Ghana; supporting the work of the IUCN Species Survival Commission African Elephant Specialist Group). In addition, a large number of projects throughout the WWF Africa and Madagascar Programme indirectly supported elephants through broader conservation goals. These included projects that support protected areas in elephant range (e.g. national parks in range states such as Cameroon, Côte d'Ivoire, Gabon, Kenya, Nigeria, South Africa, Tanzania and Uganda), trade monitoring and controls (e.g. support to TRAFFIC), and community-based and sustainable wildlife use (e.g. support to CAMP-FIRE in Zimbabwe, LIFE in Namibia).

In the context of developing a strong and decentralized WWF Africa and Madagascar Programme, and in light of the on-going threats to elephant populations, it was considered appropriate to develop a continent-wide strategy for elephant conservation which responds more to the needs of the species across its full range, and in which WWF can play a specific and well-identified role under a programmatic approach. Therefore, the WWF African Elephant Programme (AEP) was established in 2000.

Building on 40 years of experience in elephant conservation, WWF's new initiative aimed to provide strategic field interventions to help guarantee a future for this threatened species. The Programme Document (WWF 2001) represented the action plan on which the AEP was based for its first phase, from 2000 to 2005.

The long-term goal of the first WWF action plan was: *to conserve forest and savanna elephant populations in Africa.*

WWF's elephant interventions were organized around four objectives:
1. (Protection and Management): To reduce the illegal killing of elephants through improved protection and management
2. (Capacity Building): To increase capacity within range states to conserve and manage elephants
3. (Conflict Mitigation): To increase public support for elephant conservation by reducing conflict
4. (Trade Controls): To reduce the illegal trade in elephant products

These objectives were in turn broken down into a series of targets and milestones and key activities. With the development of WWF's global targets and milestones for flagship species conservation in 2001, the AEP then became a delivery mechanism for the WWF Global Species Programme.

3.1 ACHIEVEMENTS IN IMPLEMENTING WWF'S FIRST SPECIES ACTION PLAN FOR AFRICAN ELEPHANTS

After an initial period of planning and fundraising for the first action plan, support for field activities began in mid 2001. Between July 2001 and June 2006 WWF's African Elephant Programme made a number of significant achievements. Highlights from projects supported by the programme include:

- More than 420 people in 18 range states were trained in elephant management issues such as law enforcement and HEC mitigation. Numerous community training workshops were organized specifically on HEC mitigation. In addition, the sharing of lessons between elephant management authorities from different range states and conservation NGOs was promoted through exchange visits and workshops.
- A new national park - Quirimbas - was established in Mozambique, preserving some 6,000 km^2 of elephant range. Although many actors were involved with creating this protected area, the AEP provided some of the first funding to help establish management systems, train over 30 park guards, and help more than 20 local communities mitigate HEC.

- Surveys were conducted in Congolian coastal forest in Cameroon to provide data for the establishment of the three new reserves of Mont Nlonako, Makombe and Ebo.
- Human-elephant conflict was monitored and HEC mitigation methods were developed and tested around several sites in Africa including Quirimbas National Park and Niassa Game Reserve in Mozambique, the Masai Mara National Reserve in Kenya, South Luangwa National Park in Zambia, Selous Game Reserve in Tanzania, Campo Ma'an National Park in Cameroon and in the Caprivi Strip in Namibia. WWF supported the training and equipping of villagers and local wildlife authority staff.
- A training course was developed for HEC mitigation. Building on material developed previously by the Elephant Pepper Development Trust, and consolidating lessons learned from work carried out by AfESG members and partners across Africa, an annotated course outline was produced.
- The IUCN AfESG is working in Burkina Faso and Tanzania to develop a model approach to vertically-integrated management systems for HEC from field to policy level.
- The MIKE Programme was implemented across six sites in central Africa, building capacity of wildlife authorities to monitor and census elephants and providing baseline data on elephant populations where previously no accurate records existed.
- WWF support helped increase anti-poaching efforts around 10 protected areas through training and the provision of equipment and supplies.
- WWF provided financial and/or technical support for the development of sub-regional management strategies for central and southern Africa, and for national strategies in northern Mozambique and Kenya.
- The CITES Secretariat and TRAFFIC provided training for law enforcement officials in Ethiopia to improve wildlife trade monitoring and control. This was followed by a significant crack down on illegal domestic ivory markets and a revision of wildlife legislation.
- TRAFFIC provided training to government authorities in Tanzania to implement ETIS.

- TRAFFIC conducted studies into domestic ivory markets in six African states (Angola, Côte d'Ivoire, Egypt, Mozambique, Nigeria, and Senegal) and further highlighted the importance of such domestic markets in fuelling the illegal international trade.
- A review was conducted of opinions and options available to wildlife managers in southern Africa in managing elephants. The report (Cumming & Jones 2005) was presented to range state representatives during a meeting to develop the southern African management strategy.
- The AfESG's Local Over-population Task Force has produced draft guidelines for the management of local over-population of African elephants.

Whilst it is often difficult to prove any direct link between WWF's investment in elephant conservation and population changes, it is perhaps noteworthy that, in several countries where WWF supported elephant work (e.g. Kenya, Tanzania, South Africa), populations have increased.

The achievements of the AEP were realised by a portfolio of 18 projects that complement elephant conservation work in WWF's broader conservation programme across Africa. None of the achievements could have been attained without the collaboration of range state governments and their respective Ministries, national parks services and wildlife authorities, and local people around project sites. Several multi-lateral agencies and NGOs were also key partners in programme implementation, many taking the lead in certain projects. These partners included: CITES, Durrell Institute of Conservation and Ecology, Elephant Pepper Development Trust, Integrated Rural Development and Nature Conservation, IUCN/SSC AfESG, Monitoring the Illegal Killing of Elephants Programme, SRN (Sociedade de Gestão e Desenvolvimento da Reserva do Niassa), TRAFFIC, and the Wildlife Conservation Society (WCS).

In addition to activities co-ordinated by the AEP, many other WWF projects contributed to elephant conservation by enhancing protected areas management in elephant range (e.g. Dzanga-Sangha in CAR, Lobeke in Cameroon, Comoé in Côte d'Ivoire, Salonga in DRC, Minkebe in Gabon, Udzungwa Mountains in Tanzania, Greater Limpopo in southern Africa) and by implementing community-based natural resource management programmes (e.g. conservancies in Namibia, CAMPFIRE in Zimbabwe).

3.2 LESSONS LEARNT FROM IMPLEMENTING WWF'S FIRST AFRICAN ELEPHANT ACTION PLAN

Each WWF elephant project provided lessons for its implementers and partners. Much experience has also been gained by project teams, especially in the ever-evolving area of HEC mitigation.

In 2005, WWF decided that it was necessary and appropriate to review the implementation of the first plan to assess progress, identify constraints and areas for improvement, and learn lessons for the development and implementation of a new plan. This formal, external evaluation, conducted in early 2006, identified a number of lessons and produced a number of pertinent recommendations (EDG 2006). Lessons included:

- Targeted interventions clustered in the same geographical area are more effective than to work towards the same range of objectives in geographically, socially and administratively different places.
- Elephants are icons for both landscape conservation and fund-raising and conservation of landscapes sufficient for elephants will benefit a host of other species, along with local people.
- The approach of working closely with partner programmes and organizations possessing specialist expertise in key areas of elephant conservation should be continued and strengthened, as this will achieve greater results than would be possible by acting in isolation.
- A long term presence leads to more successful outcomes and some of the more successful WWF elephant projects have been those that have either been funded through several phases or have built on earlier success by other funding agencies in the same site or country.

Key recommendations from the evaluation were:
- The wide participation of the WWF Network in the development of the next action plan
- The next phase should be designed in line with the new WWF Standards for Project and Programme Management and the

Global Species Programme's monitoring system.

- The AEP should concentrate on its proven strengths and on key ongoing and emerging threats. Its current strengths are in HEC mitigation and trade investigations and control. Ongoing and emerging threats include the acceleration of habitat conversion due to commercial use of land (for biofuel, intensive agriculture or forestry or human settlement), the increasing insularization of elephant populations, disruption of natural population processes and consequent perceptions of local over-population, increasing poaching and over-exploitation for domestic and international ivory markets, as well as possibly the bushmeat trade.

- The AEP should cluster its actions in key ecoregions, countries, or regions, operating at several different levels within the same area to bring together actions on policy and legislation, capacity-building of regional, national and local institutions and grass-roots community work to secure key elephant habitats and populations. However, the AEP should retain sufficient flexibility to support a few stand-alone projects in other sites that might contribute to a larger "win" or serve as tests or models of an innovative approach.

- Rather than dealing with HEC, perceived over-population and the need for conservation-friendly livelihood enhancement as separate issues, there should be more emphasis on "managed elephant range" that looks for solutions of coexistence between people and elephants, and along with them the ecosystems and biodiversity they share.

- The practice of forming partnerships with organizations with complementary skills should be continued and enhanced, and extended to working with social development organizations for the purposes of conservation-friendly livelihood benefits.

- WWF field offices would benefit from input from the AEP to add value to their programmes, and the AEP should target its initiatives by considering sub-regional programme priorities.

- The AEP Coordinator should not have to spend so much time on fund-raising within the WWF Network (rather than outside of WWF); the AEP should receive a more secure, multi-year funding commitment from the WWF Network, commensurate with the importance of the African elephant as a global flagship representing the challenges of wildlife in the context of human land use and as an icon that brings in substantial funding to the Network.

- WWF needs to improve co-ordination of its elephant activities so that even those projects not directly supported by the AEP provide information to the co-ordinator and are considered to make a contribution towards delivery of the African elephant action plan.

- The AEP should have appropriate human resources, especially a full-time co-ordinator.

WWF has taken these lessons and recommendations in to account as it has developed the new action plan for the period 2007-2011.

The following sections of this document outline the threats that will be addressed by the new plan, how landscapes have been prioritized, and the programme's mission (vision, goal, objectives and key activities).

4. THREATS TO AFRICAN ELEPHANTS TO BE ADDRESSED BY WWF

The main, direct threats to African elephants are poaching for ivory and meat, loss of habitat, and human-elephant conflict (see Section 1.2). In turn, these direct threats are influenced by a suite of indirect threats. A root cause analysis is presented in Annex 5. In summary the key threats are as follows:

Direct Threat: Poaching
Indirect threats/root causes 1: Demand for ivory (local, national and international); Demand for meat (local and national); No legal control or enforcement;
Indirect threats/root causes 2: Subsistence needs; Revenue generation; Few alternative sources of revenue or protein (especially for families who have lost the main earner(s) through HIV/AIDS); Inadequate resources/ capacity for law enforcement

Direct Threat: Habitat loss (including habitat deterioration and fragmentation)
Indirect threats/root causes 1: Demand for land (for agriculture, settlement, development); Demand for timber; Inadequate habitat protection
Indirect threats/root causes 2: Subsistence

needs; Commercial and economic development (local and national); Land-use practices and policies

Direct Threat: HEC
Indirect threats/root causes 1: Close proximity of villages and fields to elephant habitat; Local over-population of elephants; Lack of space for elephants; No awareness of effective mitigation measures.
Indirect threats/root causes 2: Land use policies and practices; Habitat conversion; Increasing human populations

The objectives and activities of this SAP are aimed at addressing most of these direct and indirect threats, as articulated in Section 5 and Section 6.

5. SELECTING PRIORITY ACTIONS AND LANDSCAPES: WHICH ELEPHANT POPULATIONS SHOULD WWF WORK ON?

"It is important not to spend money on elephant populations that are doomed by habitat loss and the pressure of human population growth. On the other hand it is important not to use too large a proportion of resources on relatively secure populations" (Thouless, 1999). This is an accurate summary of the dilemma facing WWF in choosing priority populations on which to focus its limited resources. WWF could maximise the number of elephants saved by helping conserve the largest, most intact and healthiest populations. On the other hand, it could try to save the most threatened elephants by concentrating on the smaller, more fragmented and most endangered populations.

In an earlier elephant priority setting exercise (Cumming *et al.* 1990) emphasis was placed on saving the most threatened and unique populations. Therefore, the habitat-specific populations were given highest priority (e.g. the desert-dwelling populations in Namibia). The small, fragmented and most threatened populations in west Africa were considered the second highest priority, with the large, intact and relatively well-managed populations in southern Africa coming lowest on the list.

Later, Thouless (1999) proposed that populations of "high intrinsic importance" should be priorities - these are populations that are large, ecologically unique and scientifically

well known. However, since the biological and conservation significance of populations identified as ecologically unique has not been supported by any genetic evidence, and since well-studied populations are generally well monitored by other conservation agencies, it would appear that WWF might be better placed to contribute to the conservation of large elephant populations.

Most of the larger elephant populations occur in tropical forest and miombo woodland (Douglas-Hamilton *et al.* 1992). However, if the WWF AEP concentrated on only these populations, opportunities would be lost in conserving forest populations in west Africa where not only are elephants important keystone species, but they can be flagships for broader biodiversity conservation. Genetic evidence also suggests there may be differences between west and central African elephants (Eggert *et al.* 2002).

WWF cannot work everywhere, and would be unwise to set itself elephant conservation objectives in areas it has no capacity to work in. Wherever it works, it must also be sure the elephant conservation it supports will be continued by partners once a project intervention is concluded.

Range state management strategies do not provide guidance on where to focus geographically. Most of the sub-regional and national elephant management strategies produced to date (see section 2.4) take a threats-based approach to planning and do not list geographical priorities. Therefore, in order to take account of the multitude of factors affecting choice of sites and activities, WWF has developed a set of criteria for prioritizing its work in elephant landscapes.

5.1 CRITERIA FOR PRIORITIZING WWF'S WORK IN AFRICAN ELEPHANT LANDSCAPES

WWF cannot provide direct support to help conserve all African elephant populations across all 37 range states. We need to focus our conservation efforts on delivering the objectives of our African elephant species action plan in a number of key landscapes where we can make a measurable conservation impact. For the purpose of WWF's African elephant work, a landscape is considered to mean an area of land in elephant range that is

currently inhabited by an inter-connected population of elephants.

Criteria have been developed to help prioritize WWF interventions in elephant landscapes. These consider a mix of institutional, biological and political factors that can help WWF decide on whether it should intervene in a given site or landscape on a given issue. Note that, if a landscape meets the assessment criteria, it may be a priority for the African Elephant Programme even if it is not part of a WWF priority ecoregion.

Potential landscapes for consideration were identified based on factors such as sub-regional importance, known conservation needs, range state management plans, and WWF's strategic interests and priorities (see section 7.2). Consideration was given to landscapes across the whole continent with emphasis on the protection of historically isolated lineages (or Evolutionarily Significant Units) because these cannot be recovered, and protection of adaptive features through conservation of heterogeneous landscapes and viable populations (see Moritz 2002).

Category A criteria were used to decide if a landscape would be considered or not, and proposed sites failing to meet any of these criteria were rejected. Category B criteria were used to establish the suitability of landscapes and help rank them in order of importance for WWF within the action plan.

Each potential landscape was scored against each question. (The scoring is 0, 1 or 2 for each question - multiplied by the relative weighting of the question - to provide a total score for each landscape).

Note that elephant conservation work that falls outside of WWF priority elephant landscapes as defined in this SAP will not be supported. Also note that, as the SAP is implemented, both sets of criteria, the questions and their weightings will be reviewed regularly by the WWF African Elephant Working Group, and priorities may be altered to take account of any new information that becomes available. Boundaries of priority landscapes will also be considered labile until they can be finalized with input from partners and other stake-holders.

Elephant Landscape Assessment Criteria - Category A

The following criteria and assessment questions were used to decide if a given landscape was eligible to be considered for WWF support, whether or not funding goes through the AEP. Note that the Category A criteria are essentially killer assumptions - if they were not met, the landscape was not considered for inclusion in the programme.

A1: Identified threat. WWF will only act in order to address a specific, identified threat or management issue affecting an elephant population. Threats to be addressed include habitat loss or deterioration, poaching, HEC, etc. Issues include CBNRM, policy development, etc.

- *Is there an identified threat or management issue facing this elephant population that WWF would be able to help address?*

A2: Population viability. Support will only be provided to elephant populations considered viable (i.e. likely to survive in the landscape for at least three generations to come if the major threats are reduced or removed). Work will not be supported on elephant populations considered too small or too unstable to be viable, nor on those that occur in habitats not expected to survive even with conservation efforts (e.g. due to planned logging).

- *Is the elephant population in the landscape viable for the long-term (at least 3 elephant generations) if the main threats are reduced or removed?*
- *Are conservation measures likely to ensure the survival of adequate elephant habitat in the landscape?*

A3: Feasibility and sustainability. Interventions will not be supported if they are deemed infeasible, unsustainable, or where the political and social climate means conservation action is unlikely to be successful. The political and social climate will be gauged as unfavourable if there has been, for example, on-going civil conflict or strife that has rendered conservation projects unviable. The political climate is also measured by the broader wildlife and environment policy arena (see B2)

- *Is the political and social climate suitable for conservation in this landscape?*

- *Does WWF operate in this landscape or plan to operate in this landscape in the next 2-5 years?*
- *Does WWF have the capacity to implement elephant work in the landscape?*

Elephant Landscape Assessment Criteria - Category B

The following criteria and assessment questions are used to decide the relative importance of a given landscape to WWF. The relative weighting of each question is marked in parentheses.

B1: Population size, range and representativeness. For a given sub-region, biome or ecoregion, larger elephant populations will generally be given priority over smaller populations. Adequate range must be available with core areas of suitable elephant habitat. The AEP will aim to conserve representative populations of each sub-species (forest and savanna elephants) and populations in representative habitat types (forest, woodland, savanna, desert) in all four sub-regions (central, eastern, southern and west Africa). This approach is aimed at ensuring the genetic and behavioural/cultural diversity within elephant populations is conserved and they maintain their keystone role in representative habitats across the continent.

- *Is the population an appropriate size for the intervention? (i.e. is the population large enough to make an intervention worthwhile?) (Weighting: 3)*
- *Is adequate range and habitat available or potentially available following habitat restoration or range expansion? (3)*
- *Is the population ecologically, geographically or taxonomically significant for that sub-species or its habitat?(3)*

B2: Conservation impact. AEP interventions must have a high likelihood of producing a concrete conservation impact on the ground. Factors used to determine potential impact are sustainability, demonstrated political will of the relevant national government(s), and the strength of the existing or planned WWF capacity on the ground to deliver. Sustainability issues are crucial - it must be clear that work in a given landscape will have a chance of having an impact that will last beyond the life of the intervention through on-going work by partners. Political will can be demonstrated

by a government's willingness to engage in partnership with WWF, the national policy environment (including presence of appropriate elephant management strategies), the country's history of signing, ratifying and implementing key international conventions, the level of investment in wildlife conservation, etc. WWF capacity relates to issues such as WWF's presence on the ground (e.g. projects, offices, staff) where it has demonstrated added value, and available technical expertise within the Network. WWF will not work at sites where other agencies and NGOs are clearly coping with the threats and where WWF would not add any extra value. At the same time as considering all these factors, creativity and innovation will be fostered as we strive for new strategic solutions to long-standing problems (see below).

- *How strong is the political will to conserve the landscape? (1)*
- *Does WWF have strong capacity to operate (ourselves or through partners) and support elephant conservation in this landscape (due to its current or expected presence)?(3)*
- *Is WWF's involvement necessary to conserve elephants in the landscape (i.e. will we add value)?(1)*
- *Are appropriate partnerships with NGOs and/or government agencies and/or local people likely to develop or expand in this landscape?(2)*
- *Overall, is WWF liable to make a conservation impact on elephants in this landscape i.e. can threats to elephants be reduced or removed?(3)*

B3: Synergies with priority ecoregions and other WWF strategic priorities. Priority will be given to landscapes that overlap with WWF's identified priorities for biome/place-based conservation (especially forests, but also freshwater), and other priority or flagship species, such as great apes and rhinos. In this way the project will have more impact by addressing several WWF conservation targets for a given investment of funds. This criterion is especially important for forest elephants since many populations occur sympatrically with great apes in priority forest ecoregions. In addition, many savanna elephants in woodland ecoregions such as miombo overlap in range with black rhino populations. It should be noted, however, that species like elephants that cross habitat boundaries may sometimes have important populations outside of priority biomes or ecoregions.

- *Is the landscape also important for WWF biome priorities?(2)*
- *Is there an overlap with WWF priorities for other priority species?(2)*

B4: Elephants as flagship species. Interventions will be favoured in landscapes where there is strong potential to maximise the use of elephants as a potential flagship species in terms of providing opportunities for communications, education and awareness, and fundraising, and having a knock-on effect of helping conserve other species.

- *Is the elephant a suitable flagship species for broader conservation issues in the landscape?(2)*
- *Will other faunal and floral species benefit from the project? (1)*

B5: Innovation and catalytic role. The AEP encourages innovative programmes that test new approaches to elephant conservation and can act as models that provide lessons for other programmes. They should produce a multiplier effect wherever possible, leveraging further support from other agencies. This can be demonstrated through the intervention's role in generating action, policy and partnerships at all levels.

- *Is WWF's work in this landscape likely to have a multiplier effect, leveraging further support or replica initiatives? (1)*

B6: Cost-benefit Assessment. Any WWF intervention must maximise the conservation impact for the given budget and provide value for money. If the elephant conservation work required in a landscape is going to be very expensive for relatively small impact, it should not be supported. Issues of scale and logistical feasibility will be relevant in this assessment.

- *Is WWF support for elephant conservation in this landscape likely to be cost effective?(2)*

When the application of the assessment criteria resulted in some landscapes having equal scores, priority was given to 1. the landscape with the highest score before the weighting system is applied; 2. the landscape with the largest elephant population.

Work Outside of Landscapes

Root causes of illegal killing of elephants include the demand for meat and ivory (see Annex 5). These demands often come from

outside an elephant landscape; indeed, often outside elephant range states. For example, many states without elephants or with very few elephants (such as Egypt, Sudan and China) are implicated in ivory trade (see section 2.4). Therefore, work to tackle ivory and bushmeat trades will focus on priority countries identified through market studies and the analysis of ETIS data. The WWF African Elephant Programme will concentrate its efforts on addressing trade in elephant products in range states where WWF is also addressing poaching issues. At the same time, however, it may be necessary to focus on other African states that serve as key trade routes or markets for contraband ivory, even if they do not have elephants themselves. Priorities for such trade work have been chosen in collaboration with TRAFFIC, which conducts most of WWF's wildlife trade work.

5.2 PRIORITIZING WWF'S ACTIONS WITHIN AFRICAN ELEPHANT LANDSCAPES

In this Species Action Plan, objectives are developed to address identified threats to African elephants (see above). The structure of the objectives, and the activities developed to address them, take account of a number of factors, including:

- sub-regional and national elephant management strategies (thus ensuring that WWF's work closely reflects the identified priorities of the range states ands their key stakeholders)
- successful actions undertaken by WWF during implementation of its first African elephant SAP (2001-6) so that WWF's work builds on its strengths and lessons learned
- lessons learnt from the formal programme evaluation (EDG 2006) and experiences from implementing other WWF action plans for terrestrial flagship species in Africa and Asia
- potential synergies with other WWF programmes, especially terrestrial Ecoregion Action Programmes and Species Action Plans for flagships in the same habitats (i.e. African great apes and African rhinos)
- the WWF Standards for Project and Programme Management and the monitoring system developed by WWF's Global Species Programme.

6. PROGRAMME MISSION

This Species Action Plan outlines the goal, objectives, and key activities for WWF's work on African elephants. It is the framework which will guide the implementation of the WWF African Elephant Programme for the period 2007-2011. It differs from other action plans as it outlines where WWF's specific contributions will be, rather than what needs to be done overall for African elephants. All new WWF elephant projects throughout Africa will have to demonstrate a contribution towards the SAP. (Note: the SAP is the plan for action; the AEP is the mechanism for delivery although some elements of the SAP will be delivered by other parts of the WWF Network and its partners).

The goal, objectives and activities are structured in a logical, hierarchical manner, and are as objectively verifiable as possible to assist in programme monitoring and evaluation. Activities describe the types of action required to attain objectives, but detailed activities will be described in individual programme interventions as they are developed, as well as in annual work plans of the AEP. The planning terminology is explained in Annex 9.

6.1 VISION

In 25 years time, forest and savanna elephants continue to roam across Africa in landscapes where people and wildlife flourish alongside each other.

6.2 GOAL

By 2017, elephant populations and their habitat cover are stable or increasing in 20 landscapes

6.3 OBJECTIVES

The objectives for African elephants reflect what WWF aims to achieve for the conservation of this species through projects on the ground with partner agencies and local people. Choice of target landscapes for each objective is defined in section 7.2. Each objective of the WWF SAP for African Elephants is grouped under a higher level "Category of Objective". The category objectives are standard objectives for all WWF SAPs. By showing how work on each elephant objective relates to these higher level objectives it helps WWF roll up results from its field programmes on all flagship species to demonstrate its global impact.

WWF's objectives for African elephants, by "category of objective" are as follows:

Category of Objective 1. To further relevant policy and legislation in all sectors and at all levels

SAP Objective 1.1: The development and application of policies and legislation that create an enabling environment for elephant conservation facilitated in 13 range states by 2011

Target range states include: Burkina Faso, Cameroon, CAR, Congo, Côte d'Ivoire, DRC, Gabon, Kenya, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe

Category of Objective 2. To ensure the necessary extent, integrity and functioning of critical habitats [quantity, quality, management]

SAP Objective 2.1: Elephant habitat effectively conserved in order to increase range and enhance connectivity between populations (including transboundary populations) in 14 landscapes by 2011

Target landscapes include TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Northern Mozambique, KAZA, Greater Limpopo, Tai, Park W, Nazinga

Category of Objective 3. To ensure adequate protection and biological management of populations

SAP Objective 3.1 Illegal killing of elephants reduced by at least 30% in 12 landscapes by 2011

Target landscapes: TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Ruaha, Northern Mozambique, Luangwa, Tai, Park W, Nazinga

SAP Objective 3.2: Illegal trade in major elephant product markets reduced by at least 50% in 9 African states and 2 Asian states by 2011

Target states include: Angola, Cameroon, CAR, China, Côte d'Ivoire, DRC, Japan, Mozambique, Nigeria, Senegal, Sudan.

Category of Objective 4. To generate mutually beneficial incentives for the co-existence of people and species

SAP Objective 4.1 Human-elephant conflict reduced by at least 40% in pilot sites in 18 landscapes by 2011

Target landscapes include: TRIDOM, Sangha, Gamba, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia, KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia

SAP Objective 4.2 The livelihoods of people living alongside elephants are improved through economic development activities linked to wildlife conservation in 20 landscapes by 2011

Target landscapes include: TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia. KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia.

Category of Objective 5. To create awareness and influence adverse attitudes and behaviour

SAP Objective 5.1 Public support for, and participation in, elephant conservation increased in 20 landscapes by 2011 through increased awareness of policies, laws, options and benefits

Target landscapes include: TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia. KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia.

7. PROGRAMME INTERVENTION

7.1 KEY ACTIVITIES AND INDICATORS TO MEET PROGRAMME OBJECTIVES

The AEP objectives will be addressed through a series of interventions solicited from, and developed in collaboration with, the WWF sub-regional programme offices and their partners. Any given intervention may address one or more of the programme objectives. The activities listed under each indicator provide an indication of the sorts of actions required, but they are not exhaustive.

SAP Objective 1.1: The development and application of policies and legislation that create an enabling environment for elephant conservation facilitated in 12 range states by 2011

Indicators: Number of states with appropriate policies, legislation and action plans; Number of range states adhering to Conventions &

MEAs; Number of companies with environment policies

Key Activities:

- Help revise national legislation to adapt to international environment conventions and multi-lateral environment agreements, and to provide an enabling environment for elephant conservation (e.g. HEC mitigation, CBNRM, benefit sharing, ivory trade controls, transboundary harmonization)

- Collaborate with UNEP and CITES in the development and implementation in African elephant range states of a framework for reviewing national wildlife policy

- Develop, implement and monitor participatory land use plans with stakeholders to conserve buffer zones and corridors and reduce HEC

- Support the elaboration, implementation and monitoring of 3 sub-regional elephant management plans (central, southern, western) and 8 national elephant management plans (Cameroon, CAR, Congo, DRC, Gabon, Kenya, Mozambique, Tanzania) ensuring transboundary collaboration is promoted.

- Lobby for the integration of sub-regional plans into sub-regional planning processes (e.g. CAECS into Plan de Convergence for the Congo Basin; SAECS into SADC and TFCA development) and the allocation of government funding for implementation

- Develop and implement cooperative agreements between states for conservation and management of transboundary elephant populations

- Support development of appropriate policies for addressing local over-population of elephants by promulgating WWF positions, disseminating existing technical guidelines on translocation and local over-population, and helping develop and test non-lethal tools.

SAP Objective 2.1: Elephant habitat conserved effectively in order to increase range and connectivity between populations

(including transboundary populations) in 14 landscapes by 2011

Indicators: Area of habitat cover; Area of habitat under protection; PA Management effectiveness (as measured by scorecards)

Key Activities:

- Promote the creation of new national and transboundary protected areas (to expand elephant range, increase habitat protection and reduce local over-population)

- Improve management effectiveness in PAs and TFCAs (including reduction of logging, mining, hunting and settlement)

- Conduct studies into elephant movements and habitat use across seasons to identify corridors required for connectivity and to improve anti-poaching patrols

- Establish land use plans for elephant corridors between protected areas to maximize connectivity, prevent encroachment and reduce HEC

- Develop initiatives with the private sector to monitor and reduce the impacts of extractive industries (mining, logging, agribusinesses, etc) on elephants and their habitats - including promotion of best practices and SFM in logging companies

- Provide tools (e.g. best practice guidelines) for management of TFCAs and integration of local people into PA management

- Conduct climate vulnerability assessments for elephant populations in Africa and use the results to develop and implement climate change adaptation strategies for landscapes identified as being at high risk

- Use appropriate scorecards to measure protected area management effectiveness

- Develop joint habitat protection initiatives with forest and freshwater conservation programmes and explore options for using schemes such as Payment for Environmental Services

- Implement monitoring system with partners to assess regularly the level of

habitat cover and habitat quality in target landscapes.

SAP Objective 3.1 Illegal killing of elephants reduced by at least 30% in 12 landscapes by 2011

Indicators: Trend of illegal off take; Law enforcement effectiveness per unit effort

Key Activities:

- Train and equip anti-poaching staff (e.g. park guards, community game guards) to increase area and frequency of surveillance coverage

- Monitor anti-poaching success per unit effort

- Develop capacity for MIKE implementation and provide support for regular population censuses

- Support the development and operation of key elephant databases (e.g. African Elephant Database, MIKE) to provide information on elephant numbers, poaching levels and poaching impacts.

SAP Objective 3.2: Illegal trade in elephant products reduced by at least 50% in 9 African states and 2 Asian states by 2011

Indicators: Levels of ivory trade in major markets; Number and volume of ivory seizures

Key Activities:

- Monitor domestic ivory markets and lobby for study recommendations to be implemented in Africa and Asia

- Train and equip law enforcement officers (e.g. customs, police) to monitor and tackle illegal wildlife trade and help implement the CITES Action plan for the control of domestic trade in ivory in collaboration with TRAFFIC

- Improve implementation of ETIS and data reporting in range states in collaboration with TRAFFIC

- Investigate the sustainable use of DNA markers and other tools to identify sources

of illegal ivory and improve ETIS reporting

- Identify the impact of the bushmeat trade on elephants and develop initiatives to curb the problem (especially in central Africa).

SAP Objective 4.1 Human-elephant conflict reduced by at least 40% in pilot sites in 18 landscapes by 2011

Indicators: Level of conflict (fields raided, area of crops lost, people hurt, infrastructure destroyed); Financial costs of HEC (cost of crops and infrastructure lost); Number of elephants killed in PAC operations

Key Activities:

- Develop new field and policy tools for improving HEC monitoring and mitigation

- Field test modern methods for HEC monitoring and mitigation, and measure impacts of HEC mitigation on local livelihoods

- Replicate successful HEC pilot projects in remaining priority landscapes

- Train wildlife management authorities and local people in HEC mitigation

- Develop programmes with stakeholders from all levels for the national "vertically integrated" management of HEC (concentrating not only on field-level mitigation measures but also encompassing relevant higher-level policy issues such as compensation, land use planning, land tenure, and equitable benefit sharing)

- Organize workshops and disseminate publications to encourage the transfer and sharing of experiences, expertise, skills and knowledge on HEC between sites, countries, sub-regions and continents.

SAP Objective 4.2 Livelihoods of people living alongside elephants improved through economic development activities in 20 landscapes by 2011

Indicators: Benefits derived from elephants (household incomes; PA gate receipts)

Key Activities:

- Support implementation of CBNRM schemes (taking account of lessons learned from existing programmes) where local people benefit from wildlife in elephant range (e.g. Wildlife Management Areas in Tanzania; conservancies in Namibia)

- Conduct feasibility studies and implement pilot projects in wildlife-based tourism to provide revenue for local people

- Establish appropriate private sector partnerships to enhance opportunities for local communities to realise tourism benefits

- Establish pilot projects that use appropriate and sustainable agricultural practices in elephant habitat to increase farmers' yields and profits but reduce conflict with elephants

- Set up community-based schemes to diversify income-generating activities away from extractive or illegal activities such as hunting and logging

- Implement participatory rural appraisal systems for monitoring livelihood benefits directly accrued by local people from CBNRM/SFM and other revenue generating schemes

- Assess lessons learned from revenue-generating projects linked to elephants and disseminate results to people involved with developing new initiatives.

SAP Objective 5.1 Public support for, and participation in, elephant conservation increased in 20 landscapes by 2011 through increased awareness of policies, laws, options and benefits

Indicators: Perceived importance of conservation to local people; Number of people engaged with WWF projects and implementing WWF tools and methods

Key Activities:

- Establish and implement an Information, Education, Communications (IEC) campaign on elephant issues with target groups (including CBOs, school children, media,

users of elephant products within and outside Africa, and key decision-makers e.g. civil servants, local government officials, judiciary)

- Building on traditional beliefs and relationships between people and elephants, raise awareness on the importance of conserving elephants.

- Raise awareness among ivory buyers, sellers and carvers about legislation relating to trade in elephant products.

- Raise awareness of local people living alongside elephants of key opportunities relating to wildlife management (e.g. tourism, HEC mitigation support, etc)

- Monitor community views and opinions (in target groups) on elephant management and conservation to measure the impacts of the IEC work

- Provide communications tools (website, newsletters, brochures, position statements, simplified explanations of wildlife laws etc) to allow others to replicate IEC campaigns, and facilitate implementation of sub-regional IEC campaigns on elephants and key management issues (over-population, HEC, etc).

7.2 PRIORITY AFRICAN ELEPHANT LANDSCAPES

The landscapes holding the largest and potentially most viable populations of elephants were identified for each sub-region and each main habitat type as determined through the African Elephant Database (Blanc *et al.* 2007). The initial selection of landscapes for assessment was based on factors such as sub-regional importance (for elephant populations and broader biodiversity), known conservation needs, range state management plans, and WWF's strategic interests and priorities.

Thirty-three landscapes were identified in this way. Twenty-six passed the screening with category A criteria and were then scored against WWF's category B criteria for prioritizing landscapes (as explained in section 5.1). The analysis (presented in Annex 6) produced a ranking of the 26 landscapes (Annex 7). WWF will aim to develop elephant

projects in the top five ranked landscapes in each sub-region which are as follows:

Rank	Priority Landscapes and Range states
Central Africa	
1	TRIDOM - Trinational Park of Dja, Odzala, Minkebe Cameroon, Republic of Congo, Gabon
2	Sangha Trinational Cameroon, CAR, Republic of Congo
3	Gamba complex Gabon
4	Salonga DRC
5	Maiko - Kahuzi-Biega DRC
Eastern Africa	
1	Selous Tanzania
2	Mara - Serengeti Kenya, Tanzania
3	Ruaha - Rungwa Tanzania
4	Tarangire – Lake Manyara Tanzania
5	Shimba Hills Kenya
Southern Africa	
1	Northern Mozambique Mozambique
2	North-west Namibia Namibia
3	Kavango-Zambezi (KAZA) Angola, Namibia, Botswana, Zimbabwe, Zambia
4	Luangwa Valley Zambia
5	Greater Limpopo South Africa, Zimbabwe, Mozambique
West Africa	
1	Tai - Grebo Côte d'Ivoire, Liberia
2	Park W - Eastern Burkina Reserves - Pendjari Park - northern Togo Reserves Burkina Faso, Benin, Niger, Togo
3	Nazinga - Kabore Tambi NP- Red Volta-Dough Burkina Faso, Ghana, Togo
4	Gourma - Sahel Mali, Burkina Faso
5	Bia – Goaso - Djambarakrou Ghana, Côte d'Ivoire

Note that this list of landscapes will be reviewed on a regular basis and WWF reserves the right to alter its priorities in the light of new information or changing circumstances on the ground. It should also be noted that many other elephant populations across Africa merit conservation action; this list reflects simply the

areas where WWF will primarily invest its resources into elephants.

In addition to work in priority landscapes, WWF and TRAFFIC will tackle elephant trade issues in the following African states:

- Angola
- Cameroon
- Central African Republic
- Côte d'Ivoire
- Democratic Republic of Congo
- Mozambique
- Nigeria
- Senegal
- Sudan.

Actions will also be taken to monitor and regulate ivory trade in at least two Asian consumer states, such as China and Japan.

Note, however, that provision will be made to accommodate for shifting trade patterns. Identification of new or emerging trade routes may necessitate action in countries as yet unidentified to maximize WWF's impact on domestic markets. Similarly, government action to curb unregulated markets may result in some countries being removed from the list.

7.3 OPERATIONAL PRINCIPLES

During the implementation of the SAP by WWF's African Elephant Programme, the following principles will be adhered to. The AEP will:

- co-ordinate and monitor WWF's portfolio of elephant projects
- consider elephant conservation within the broader biodiversity conservation and socio-economic goals of range states
- provide support for strategic and catalytic elephant conservation actions across the four African sub-regions, whilst maintaining the flexibility to respond to emergencies as and when they arise
- support capacity-building interventions under each conservation objective to ensure African governments and people are able to manage and protect their own elephant populations
- raise awareness of elephant conservation issues with the general public and within WWF through an

active and dynamic communications strategy
- raise funds for programme expansion by communicating to donors and fundraisers within and outside WWF
- develop partnerships for concrete, cost-effective conservation actions and work closely with organizations that have skills that are complementary to WWF's
- base its conservation actions on available scientific knowledge and work with scientists to improve knowledge where it is lacking
- help manage information on elephants and elephant conservation issues on behalf of the WWF Network
- provide opportunities for African students and researchers to conduct studies into elephant conservation issues such as HEC, habitat use, CBNRM, bushmeat trade, etc.
- provide a WWF voice in discussions and policy debates on elephant management issues as appropriate
- ensure all WWF elephant initiatives are scientifically-based, socially acceptable, promote equitable sharing of benefits, and can be sustained in the long-term by governments, local communities and other stakeholders.

7.4 CONTRIBUTION TO WWF ECO-REGIONAL TARGETS

Several WWF Ecoregion Action Programmes (EAPs) – and proposed WWF Network Initiatives based on ecoregion groupings - work in landscapes with elephants and will contribute directly to the conservation of elephants and their habitats. Efforts will be made to ensure that projects supported by the AEP complement the EAPs and add extra value for elephant conservation work. In turn the EAPs and the African elephant SAP protected areas actions will contribute to broader forest conservation objectives. In future, more synergies also need to be developed with freshwater conservation initiatives where they fall in elephant range.

7.5 APPROACH TOWARDS DEVELOPING NEW ELEPHANT INITIATIVES

All new WWF elephant projects in Africa will need to conform to the African elephant SAP

and contribute to its objectives and key activities. Field-based interventions will also have to focus on one of the identified priority landscapes. Nonetheless, throughout the programme WWF will need to maintain flexibility to adapt to new data and new situations as they arise.

7.6 PROGRAMME PARTNERS AND TARGET BENEFICIARIES

The WWF AEP aims to work with range state governments and their relevant natural resource management authorities (such as wildlife departments, national parks author-ities, regional and district staff, etc.). WWF will also work with other stakeholders in elephant conservation particularly local communities living side by side with elephants, national NGOs and research institutions. Throughout its actions, the AEP will emphasise capacity building initiatives which aim to empower Africans to manage their own elephant populations for broader biodiversity conservation and sustainable development needs.

Several international conservation and animal welfare NGOs invest in African elephant work. The AEP will explore ways of building new partnerships as well as strengthening existing partnerships with such agencies where joint action towards common goals can provide greater conservation impact and value for money, and provide greater scope for innov-ative and catalytic interventions. There is particularly large scope for developing joint interventions with WWF's existing partners, especially the TRAFFIC Network (a joint WWF-IUCN programme), and the IUCN/SSC African Elephant Specialist Group, which has many similar objectives. Other current project partners are listed in section 3.1. In addition, as part of its broader conservation programme WWF has partnership agreements with several agencies (e.g. World Bank, CARE, Peace Parks Foundation) that may be able to help with further development of activities under the African Elephant Programme, especially those relating to habitat conservation and community livelihoods.

The private sector is playing an increasingly important role in providing land and support for wildlife conservation, sometimes in joint ventures with communities. More effort needs to be put into developing appropriate public-private partnerships to help sustainable

development and conservation. Extraction industries (especially logging and mining) and the tourism industry have large impacts on elephants and their habitats and represent potential opportunities for partnerships.

7.7 PROGRAMME CO-ORDINATION: HUMAN RESOURCES, ROLES AND RESPONSIBILITIES

The AEP Co-ordinator

Implementation of the SAP will be overseen by an African Elephant Programme Co-ordinator. If long-term funding is secured for a broader programme, a full-time dedicated co-ordinator will be recruited. The co-ordinator has important roles to play in project develop-ment, fund-raising, programme monitoring, and communications. The precise organ-izational chart for the AEP will be finalized when structural re-organization is completed at WWF International.

Communications and Administration

Experience with similar initiatives such as the African Rhino Programme has shown that programme delivery can be optimised if the co-ordinator is provided with additional human resources to help with programme and project administration, and communications. A programme administrator would help with budgeting and financial reporting. A commun-ications officer would help produce publicity and media materials, and help promote fund-raising. Such posts will be filled as deemed necessary in relation to the size and growth of the programme, and as permitted by available funding. Opportunities will be sought as appropriate to share such posts with other WWF African species programmes, such as the African Great Apes Programme and African Rhino Programme.

The African Elephant Working Group

The WWF African Elephant Working Group (AEWG) was established in 2000 as an internal WWF body to oversee the develop-ment, implementation and evaluation of the AEP.

The AEWG comprises a range of WWF staff active in species conservation across Africa, including focal points for each sub-region who are directly working on elephant conservation. WWF National Organizations providing

financial contributions representing more than 20 percent of the overall AEP budget are also offered a seat. TRAFFIC was represented at previous AEWG meetings and should be considered for future membership. Communications staff are encouraged to act as observers.

In summary, the role and function of the AEWG for the first phase of the AEP was:

- To assist in the development, implementation and monitoring of the AEP
- To ensure the regular review and updating of the SAP
- To provide input into the identification and development of projects to address the SAP objectives
- To ensure that a balance is maintained in the AEP project portfolio, taking into account the need to address all objectives and the need for appropriate geographical and habitat representation
- To agree on funding priorities in accordance with the SAP, and work together with other WWF funding sources and potential donor agencies to meet additional agreed funding needs.

The role and membership of the AEWG needs to be revised and updated to take account of the latest WWF policies and procedures for programme management, as well as on-going re-structuring in the WWF International Secretariat. Physical meetings may be rare, but the group should remain in regular telephone and email contact over strategic and fund-raising issues.

7.8 PROGRAMME MONITORING, EVALUATION AND LESSON SHARING

An outline monitoring plan for the SAP is presented in Annex 13. This will be finalized and implemented by the AEP Co-ordinator. The co-ordinator, in conjunction with the AEWG, will then track progress of WWF elephant projects in delivering on SAP objectives.

Each elephant project that contributes to this programme will also have a monitoring plan, based on objectives and clear, measurable indicators of conservation impact against which progress can be assessed. Baseline data required to track progress against indicators will be collected within the first year where it is not available already. Technical and financial progress reports will be delivered

regularly (every six months and three months respectively) in line with WWF Programmatic and Operational Standards.

Technical staff in sub-regional programme offices will help monitor activities on the ground through site visits where appropriate. In turn, a summary technical progress report will be produced by the co-ordinator every six months based on the reports received from the field to detail overall progress of the project portfolio towards attaining the SAP objectives. Reporting will be based on the programme logframe and a monitoring framework that tracks indicators.

The annual report and analysis will be produced and circulated to donors, project leaders, and other key partners within and outside the WWF Network. A number of workshops will also be organized where possible to disseminate lessons learned.

An external evaluation of the AEP, conducted by a team including non-WWF members, will be conducted in the latter half of FY 2010. This will assess lessons learned and provide recommendations for further development of the programme.

7.9 PROGRAMME FUND-RAISING

Implementation of the African elephant SAP will require the acquisition of significant, long-term funding. The 'buy in' of the WWF Network to the SAP will be vital to help ensure suitable donor support. Linkages and alignment with relevant African Ecoregion Action Programmes, and other regional and global initiatives relating to species and forests will also be crucial to complement core elephant funding.

The AEP Co-ordinator will drive a fund-raising campaign to secure funds from within the WWF Network and from outside donors. Various external opportunities exist. For example, there are a number of private foundations and charities that have an interest in supporting either species work, or for helping develop capacity among African professionals. Many of these would be best approached directly by WWF field projects and offices; the AEP could help facilitate that.

Most government aid agencies (GAAs) that fund conservation work do so as part of a broader environment and sustainable develop-

ment agenda. Very few seem prepared to fund species conservation directly. Proposals aimed at GAAs will most likely need to focus on the conservation of elephant habitat and the associated benefits of projects to local communities. Aspects of the SAP that lend themselves to this focus are protected area establishment, sustainable forest management, community-based natural resource management, human-elephant conflict mitigation, and eco-tourism development. WWF's GAA Unit in Gland, and the relevant contact points in National Organizations, will be consulted to help identify potential opportunities. In collaboration with WWF Programme Offices, relevant embassies will also be approached within elephant range states to identify government small grants that could be accessed at that level.

In the long-term, range states need to seek sustainable financing mechanisms for more effective, large-scale and long-term funding of elephant conservation. Pilot schemes, such as the Trust Funds being developed for transfrontier conservation areas in central Africa, need to be replicated elsewhere.

7.10 PROGRAMME SUSTAINABILITY

Throughout the programme, all activities will focus on building local capacity (in government institutions, local authorities, NGOs, CBOs and communities) and on ensuring sustainability. This will be achieved by focussing on training and lessons sharing, and on empowering governments and local comm.-unities to make their own informed decisions about management of their elephant populations and their broader natural resource base.

Protected area work will put emphasis on training and management systems that will last long after any WWF support has finished. All field activities involving communities will use locally available materials and efforts will be made to help people establish income-generating activities to continue the HEC and CBNRM work long after project completion. In addition, successful HEC mitigation and effective CBNRM will improve people's livelihoods and allow them to reinvest in future development of these schemes.

A large emphasis of the SAP is placed on working with not only national government wildlife management agencies but also with community-based organizations and with national or international non-governmental organizations operating locally. Such partnerships ensure that complementary skills and knowledge are applied. Training focuses on people who can then train others. For example, in an existing WWF project in Mozambique, the first villagers to receive training on HEC mitigation then taught their neighbours the same methods. Thus, after the initial skills transfer, replication can occur with minimal on-going input.

In addition, the WWF elephant projects are likely to stimulate other donors and organizations to complement WWF investments.

The work of the AEP is also inherently sustainable since efforts will be made to create an enabling policy environment for elephant conservation. Awareness raising actions are aimed at ensuring broader understanding and buy-in to conservation goals.

It is hoped that full implementation of the WWF Species Action Plan for African elephants will result in a long-term, sustainable improvement in the capacity of African nations and their people to manage and conserve elephants. It will therefore represent a significant contribution towards ensuring elephants still roam the continent for centuries to come.

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ANNEX 1: ACRONYMS USED IN THE TEXT

AED	African Elephant Database (IUCN/SSC AfESG)
AEP	African Elephant Programme (WWF)
AEWG	African Elephant Working Group
AfESG	African Elephant Specialist Group (IUCN Species Survival Commission)
AMP	Africa & Madagascar Programme (WWF International)
CAECS	Central African Elephant Conservation Strategy
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CAR	Central African Republic
CBNRM	Community-based Natural Resource Management
CBO	Community-based organization
CITES	Convention on International Trade in Endangered Species of wild fauna and flora
CHF	Swiss francs
DNA	Deoxyribonucleic acid
DRC	Democratic Republic of Congo
DSS	Decision-support system
EAP	Ecoregion Action Programme (WWF)
EDG	Environment & Development Group
ETIS	Elephant Trade Information System (CITES)
FSC	Forest Stewardship Council
FY	Financial year
GAA	Government aid agency
GSP	Global Species Programme (WWF)
HDI	Human Development Index (UNDP)
HEC	Human-elephant conflict
IEC	Information-Education-Communications

IRDNC	Integrated Rural Development & Nature Conservation (Namibian NGO)
IUCN	The World Conservation Union
KAZA	Kavango-Zambezi (Transfrontier Conservation Area)
LIFE	Living in a Finite Environment (WWF Project)
MIKE	Monitoring the Illegal Killing of Elephants (CITES)
NGO	Non-governmental organization
NW	North-west
PA	Protected area
PAC	Problem animal control
PAME	Protected area management effectiveness
PFA	Project Finance Analyst (WWF)
PRA	Participatory rural appraisal
SADC	Southern Africa Development Community
SAECS	Southern African Elephant Conservation Strategy
SAP	Species Action Plan (WWF)
SFM	Sustainable forest management
SSC	Species Survival Commission (IUCN)
TFCA	Transfrontier Conservation Area
TRAFFIC	Trade Records Analysis for Flora and Fauna in Commerce (WWF/IUCN)
TRIDOM	Trinational Park of Dja-Odzala-Minkebe
UNDP	United Nations Development Programme
UNEP	United National Environment Programme
USA	United States of America
WMA	Wildlife management area
WWF	World Wide Fund for Nature (World Wildlife Fund in Canada and the USA)

ANNEX 2: MAP OF ELEPHANT RANGE IN AFRICA

Map taken from Blanc *et al.* 2007, courtesy of the IUCN/SSC African Elephant Specialist Group

Legend:
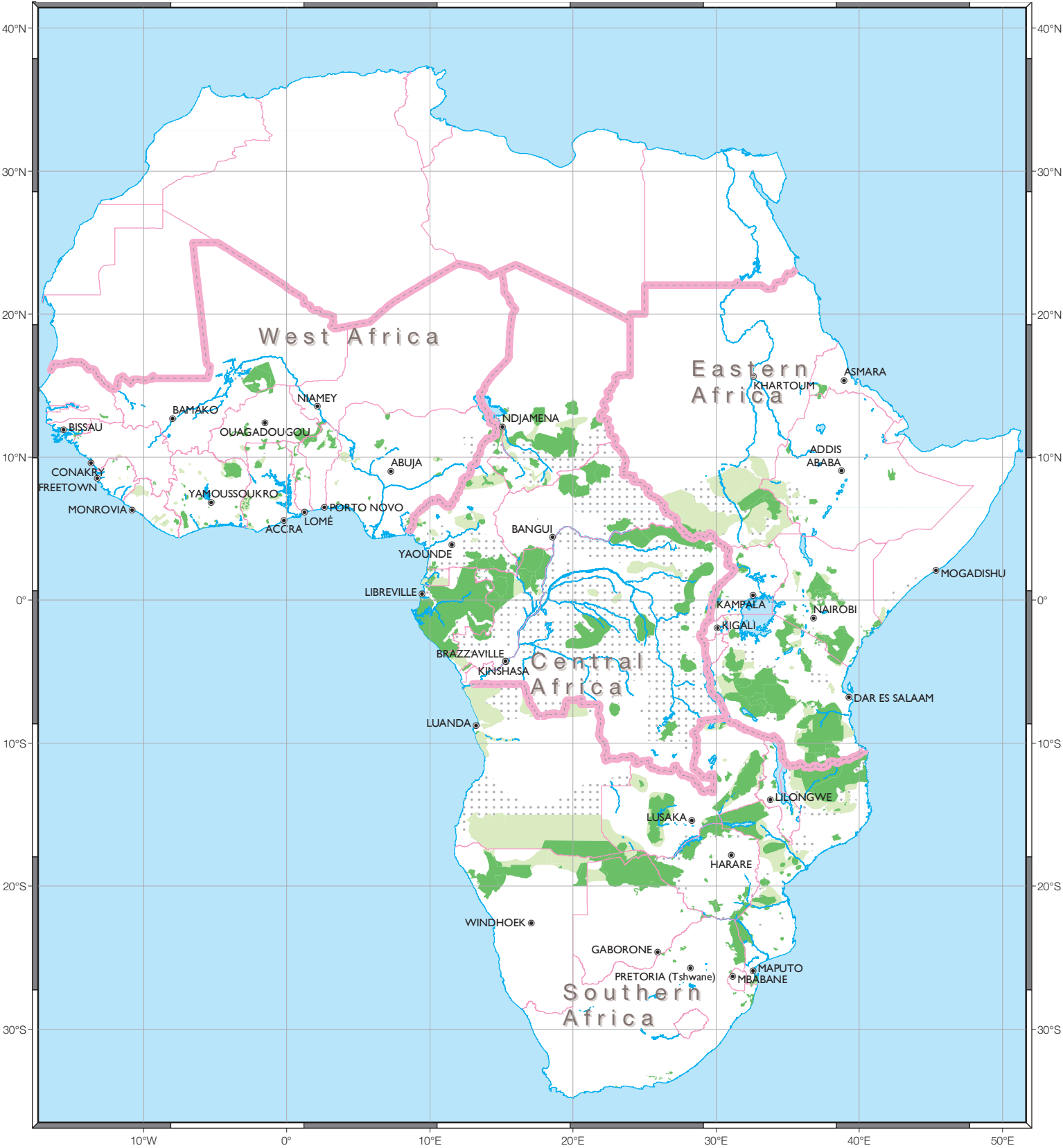
Regional Boundary
International Boundary
Capital Cities

Elephant Range
Known
Possible
Doubtful

African Elephant Specialist Group

Scale: 0 — 700 — 1,400 — 2,800 km

Sources:
African Elephant Database
Digital Chart of the World

This map is unprojected.
Scale is indicative only.

ANNEX 3: SUMMARY OF ELEPHANT POPULATION NUMBERS ACROSS AFRICA

Source: IUCN Species Survival Commission African Elephant Status Report 2007 (Blanc *et al*. 2007).

Sub-region	Population estimate by category of data quality				Sub-regional Area (km²)	Range area (km²)
	Definite	**Probable**	**Possible**	**Speculative**		
Central Africa	10,383	48,936	43,098	34,129	5,365,550	975,079
Eastern Africa	137,485	29,043	35,124	3,543	6,182,037	880,063
Southern Africa	297,718	23,186	24,734	9,753	5,973,020	1,305,140
West Africa	7,487	735	1,129	2,939	5,096,660	175,545
TOTAL	**472,269**	**82,704**	**84,334**	**50,364**	**22,617267**	**3,335,827**

NOTE: The population estimates entered in the African Elephant Database range in quality from the identification of individual animals, to uninformed guesses. Therefore, estimates are placed in four categories of increasing uncertainty from Definite to Speculative.

NOTE: The totals for each category of data are derived from pooling variances, so totals do not necessarily match the simple sum of the entries within a category (see Blanc *et al*. 2007 for more detailed explanation of data categorization).

NOTE: The 37 African elephant range states (by sub-region) are:
Central: Cameroon, Central African Republic, Congo, Democratic Republic of Congo, Gabon, Equatorial Guinea
Eastern: Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania, Uganda
Southern: Angola, Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe.
West: Benin, Burkina Faso, Chad, Côte d'Ivoire, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.

ANNEX 4: SUMMARY OF THREATS FACING KEY ELEPHANT HABITAT TYPES AND ECOREGIONS ACROSS AFRICA

For full ecoregion descriptions, maps, biodiversity values and threat assessments see Burgess *et al.* (2004), and the "Wild World" website of WWF and the National Geographic Society: http://www.nationalgeographic.com/wildworld

A full description of the Elephant Landscapes is given in Annex 7.

ALBERTINE RIFT MONTANE FORESTS

Elephant Landscapes Present:
* Eastern parts of Maiko/Kahuzi-Biega

This ecoregion contains exceptionally high species richness because of its central location in Africa, juxtaposition of habitats, and its altitudinal zonation. However, most parts of the Albertine Rift forests remain only in protected areas or the most inaccessible areas. Elsewhere, most of the land has been converted to farmland (Burgess *et al.* 2004). The main threat to the remaining forest is clearance and fragmentation by subsistence farming. Other threats include firewood collection, poaching, uncontrolled fires and invasive species. The turbulent recent history of armed conflict in the area has seen many large mammal populations, including elephants, hit hard by poaching. The Maiko-Kahuzi-Biega landscape is one of the six priority conservation areas in the ecoregion (Plumptre *et al.* 2007a)

WEST AFRICAN FORESTS AND SAVANNAS

Elephant Landscapes Present (by ecoregion):
* Guinean moist forest ecoregion:- Tai, Bia
* West Sudanian savannas:- Park W, Nazinga
* Eastern Sudanian savannas:- Northern savannas

Many of the elephants surviving in west Africa are found in the remaining fragments of the Guinean Moist Forest Ecoregion, as well as in habitat remnants in the Guinean forest-savanna mosaic, the west Sudanian savanna and the eastern Sudanian savanna. West African elephants may be among the most threatened by habitat loss and range contraction. Elephant range in west Africa was estimated to have shrunk 93 percent between 1900 and 1984 (Roth & Douglas-Hamilton 1991) and is now less extensive than in any other sub-region, representing just 5% of the continental range estimate (Blanc *et al.* 2007).

Forest resources in west Africa are threatened by a combination of factors, including agricultural expansion, increased collection of fuelwood, overgrazing, fast urbanization, industrialization, drought, civil wars and bush fires (UNEP/NESDA 2004). Rapid deforestation is an issue of major concern, given the scope of degradation, which started in the 1970s. According to FAO (2001), close to 12 million ha of forests were lost in western Africa from 1990 to 2000. Underlying causes of biodiversity loss in the Upper Guinea forest include poverty, growing human population densities and weak environmental governance (CI 2001)

Immigration of farmers from the Sahel region into west African forest zones in the 1980s increased slash and burn activities, as well as logging, gold mining and hunting (Martin 1991). Anthropogenic pressures for farmland, timber, bushmeat, fuelwood and mineral resources continue to cause forest loss, especially outside reserves (Burges*s et al.* 2004). As a result, encroachment into elephant habitat continues in many range states. For example: in Côte d'Ivoire, elephant habitat was reduced by 40 percent during the 1980s, and the elephant population was halved in the same period (Merz & Hoppe-Dominik 1991); poaching continues in the country's protected areas (Schulenberg *et al.* 1999; Fischer 2005). However, it should be noted that not all resource use by local communities is destructive: a number of indigenous strategies also exist in west Africa that protect certain ecosystems, protect certain species, or regulate exploitation (see Ntiamoa-Baidu 2001).

Across the west African savannas most large mammals have been locally extirpated by hunting outside of protected areas. In the western Sudanian savanna ecoregion, habitat is lost to the commercial expansion of agriculture and development projects, especially dams (Burgess *et al.* 2004). In the eastern savanna, the original habitat has been reduced significantly. The main threats are seasonal shifting cultivation, overgrazing by livestock, cutting of trees and bushes for wood, burning of woody material for charcoal, and uncontrolled wildfires (Burgess *et al.* 2004). Climate change is a further threat as reduced rainfall will reduce the ability of the ecosystem to recover from overuse.

CENTRAL AFRICAN FORESTS

Elephant Landscapes Present (by ecoregion):
* Northwestern Congolian lowland forests:- TRIDOM, Sangha
* Northeastern Congolian lowland forests:- Maiko/Kahuzi-Biega, Okapi
* Central Congolian lowland forests:- Salonga
* Atlantic Equatorial coastal forests:- Gamba, Campo Ma'an

Forest ecoregions within central Africa of great importance to elephants include the northwestern,

eastern and central Congolian lowland forests, and the Atlantic Equatorial coastal forests. There are incomplete data on elephant densities and habitat connectivity for the landscapes in the Congo Basin. However, existing data from certain sites indicate healthy elephant populations still survive in the region.

Logging remains the most serious threat to central African forests. For example: most of the north-western Congolian lowland forest ecoregion and the Atlantic equatorial forest ecoregion have been allocated to forestry concessions (Minnemeyer 2002; Burgess *et al.* 2004); Cameroon has allocated 81 percent of its forests to concessions (White & Martin 2002). Although logging is generally selective, there are concerns about its sustainability (Sayer *et al.* 1992; Minnemeyer 2002). Where human population densities are highest, agri-culturalists have colonized some areas.

The northeastern Congolian lowland forests face a range of additional threats. Besides logging, there is also mining for gold, diamonds, iron ore and coltan. These forests are further impacted by small-scale farming and wildlife exploitation associated with large-scale human movements as a result of armed conflict in the Great Lakes region and eastern DRC (Burgess *et al.* 2004). Oil exploitation also continues to threaten key sites in the coastal forests. However, note that in some parts of the Congo Basin (such as in the Central Congolian Lowland Forest ecoregion) large blocks of forest remain intact and only small areas have so far been lost to logging or farming (Burgess *et al.* 2004).

Throughout central Africa, elephants are threatened directly by poaching for meat and ivory (Blake *et al.* 2007). The logging, mining and oil industries facilitate poaching and the bushmeat trade by providing markets, transport and access to remote forests (Burgess *et al.* 2004). Political instability in the region has facilitated the influx of arms and ammunitions across the borders leading to high levels of organized poaching and ivory trade (L. Usongo, personal communication).

DESERTS WITH ELEPHANTS - THE SAHEL AND THE KAOKOVELD

Elephant Landscapes Present:
- Gourma
- North-west Namibia

Elephants in Mali are now confined to a single population in the Gourma, an arid area in the Sahel that is part of the Sahelian Acacia savanna ecoregion. Gourma's elephants are the most northerly surviving population in Africa, and together with Namibia's elephants, they are the most adapted to arid conditions (Blanc *et al.* 2007). The expansion of human populations into marginal areas is increasingly putting elephants into conflict with people. Agricultural irrigation and

infrastructure projects being developed in the area also pose a potential threat to elephant populations and their habitat (Blanc *et al.* 2004).

In north-western Namibia, arid adapted elephant populations occur in the Kaokoveld desert, and in neighbouring ecoregions (Namib escarpment woodlands, Etosha Pan Halophytics, Angolan mopane woodlands) (Blanc *et al.* 2007). Threats to these ecoregions are limited since there are few human demands on such arid areas. However, over-hunting (especially on the Angolan side of the border) remains a threat. Some succulent plants are over-exploited on the escarpments, which are also experiencing some soil erosion and scarring due to off-road tourist vehicles (Burgess *et al.* 2004). The elephants in the area remain vulnerable primarily due to their small population size and the risk of prolonged drought (Blanc *et al.* 2004).

EAST AFRICAN ACACIA SAVANNAS

Elephant Landscapes Present:
- Mara
- Tarangire
- Samburu

This ecoregion can be divided into northern and southern Acacia-Commiphora bushlands and thickets. Historically, human use of this habitat type was limited to pastoralist and hunter-gatherer societies. However, now the habitats and species are increasingly threatened by unsustainable water use, frequent grassland burning, tree cutting (especially for fuelwood and charcoal), and farmland expansion (Burgess *et al.* 2004). Mining (e.g. for gold and tanzanite) has also expanded in some areas recently. Elephants in the acacia savannas were hit particularly hard by poaching in the late twentieth century (Blanc *et al.* 2004), and there is an ongoing threat to biodiversity in the ecoregion from unsustainable bushmeat hunting (Barnett 2000). Corridors allowing seasonal and drought-related movements of wildlife, including elephants, are declining. For example, since the 1970s the available corridors between Tarangire National Park and nearby protected areas have decreased from thirty to four (Kahurananga & Silkiluwasha 1997).

EAST AFRICAN COASTAL FORESTS

Elephant Landscapes Present:
- Shimba
- Matumbi
- Eastern parts of northern Mozambique

More than 20 million people live within the coastal districts of Kenya, Mozambique, Somalia, and Tanzania. Intense poverty across most of this area results in high levels of dependence on natural resources (Mugo 2006).

The greatest threat to natural habitats is expanding agriculture. The coastal soils are of poor quality and so agriculture takes the form of short-term shifting cultivation, largely for food crops. Charcoal burning and fuelwood collection is the second largest threat, especially near large settlements and along roads. Forests and woodlands are the main source of fuel for the majority of the households in eastern Africa (Mugo 2006).

Other major direct threats to coastal forests, in descending order of importance as ranked by key stakeholders (Mugo 2006) are: uncontrolled fires, unsustainable logging, unplanned settlement, and destructive mining practices. Commercial logging is a major threat to the newly accessible coastal forests of northern Mozambique; mining for limestone is a particular threat near the coastal cities of Mombassa and Dar es Salaam (Burgess *et al.* 2004).

Throughout eastern Africa, the rate of offtake from the forest is more than the natural regeneration capacity. There is very little investment in forestation and reforestation (UNEP 2006b).

MIOMBO WOODLAND

Elephant Landscapes Present:
- KAZA
- Luangwa
- Selous
- Ruaha
- Western parts of northern Mozambique

More than 80 percent of people living in miombo depend on fuelwood and charcoal for cooking, heat and light (Misana *et al.* 1996). Charcoal production is having a major impact, especially close to roads and settlements. Fires set by people are also taking their toll. They are set too often and too late and result in reduced forest regeneration due to reductions in seed germination and disturbed seedling survival and growth (Chidumayo *et al.* 1996). Mineral prospecting in some sites also threatens an influx of illegal miners and serious environmental degradation (Baldus 2005).

In the Baikiaea woodlands to the south of the miombo belt, timber logging is a threat, as well as poaching and the blocking of wildlife migration routes, especially by cattle fences (Burgess *et al.* 2004). Elephant poaching has been very severe in many miombo areas.

ZAMBEZIAN AND MOPANE WOODLANDS

Elephant Landscapes Present:
- Greater Limpopo

Despite the fact that about half of this ecoregion is protected, a steadily growing human population, demanding more land and other finite resources, continues to pose a significant threat to the ecosystem (Burgess *et al.* 2004). Poaching is common in poorly funded parks. The most immediate threat is the land redistribution in Zimbabwe - some protected areas are still occupied by veterans of Zimbabwe's war of independence, resulting in rampant poaching, cutting of trees, and clearing of land for cultivation (Burgess *et al.* 2004).

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ANNEX 5: ROOT CAUSE ANALYSIS - THREATS FACING AFRICAN ELEPHANTS

Root causes → **Indirect threats** → **Direct threats**

Poaching
- Indirect threats:
  - Demand for meat (local, national)
  - Demand for ivory (local, national, international)
  - No legal control or enforcement
- Root causes:
  - Subsistence needs
  - Revenue generation
  - Few alternative sources of protein or revenue
  - Inadequate resources/capacity for law enforcement

Habitat loss (including deterioration and fragmentation)
- Indirect threats:
  - Demand for land (agriculture, settlement, development)
  - Demand for timber, firewood and other NTFPs
  - Inadequate habitat protection
- Root causes:
  - Subsistence needs
  - Commercial and economic development (local and national)
  - Land-use practices and policies

Human-elephant conflict
- Indirect threats:
  - Close proximity of villages and fields to elephant habitat
  - Local over-population of elephants
  - Lack of space for elephants
  - No awareness of effective mitigation measures
- Root causes:
  - Land-use policies and practices
  - Habitat conversion
  - Increasing human populations

ANNEX 6: ANALYSIS TO DETERMINE WWF PRIORITY ELEPHANT LANDSCAPES

CENTRAL AFRICA

Score and Score Multiplied by Weighting for each Landscape

Criterion	Question	Weighting	TRIDOM		Sangha		Gamba		Salonga		Maiko		N savannas		Campo		Lac Tele		Korup		Okapi & Zakouma	
SUB-REGIONAL RANK			1		2		3		4		5		6		7		8		9		-	
AFRICA RANK			1		2		5		8		12		13		15		18		19		-	
A1: Identified threat.	Is there an identified threat or management issue facing this elephant population that WWF would be able to help address?	Y/N	Y		Y		Y		Y		Y		Y		Y		Y		Y		Y	
A2: Population viability.	Is the elephant population in the landscape viable for the long-term (at least 3 elephant generations) if the main threats are reduced or removed?	Y/N	Y		Y		Y		Y		Y		Y		Y		?		Y		Y	
	Are conservation measures likely to ensure the survival of adequate elephant habitat in the landscape?	Y/N	Y		Y		Y		Y		Y		Y		Y		Y		Y		Y	
A3: Feasibility and sustainability.	Is the political and social climate suitable for conservation in this landscape?	Y/N	Y		Y		Y		Y		Y		Y		Y		Y		Y		N	
	Does WWF operate in this landscape or plan to operate in this landscape in the next 2-5 years?	Y/N	Y		Y		Y		Y		Y		Y		Y		Y		Y		N	
	Does WWF have the capacity to implement elephant work in the landscape?	Y/N	Y		Y		Y		Y		Y		Y		Y		Y		Y		N	
B1: Population size, range and representativeness.	Is the population an appropriate size for the intervention? (i.e. is the population large enough to make an intervention worthwhile?)	3	2	6	2	6	2	6	2	6	2	6	2	6	1	3	1	3	1	3		3
	Is adequate range and habitat available or potentially available following habitat restoration or range expansion?	3	2	6	2	6	2	6	2	6	2	6	1	3	1	3	2	6	2	6	2	6

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Criterion / Question	L1		L2		L3		L4		L5		L6		L7		L8		L9	
Is the population significant for that sub-species or its habitat?	3	6	2	6	2	6	2	6	2	6	2	6	2	6	1	3	1	3
B2: Conservation impact. How strong is the political will to conserve the landscape?	1	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	1	1
Does WWF have strong capacity to operate (ourselves or through partners) and support elephant conservation in this landscape (due to its current or expected presence)?	3	6	2	6	2	6	2	6	1	3	1	3	1	3	2	6	1	3
Is WWF's involvement necessary to conserve elephants in the landscape (i.e. will we add value)?	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2
Are appropriate partnerships with NGOs and/or government agencies and/or local people likely to develop or expand in this landscape?	2	4	2	4	2	4	2	4	2	4	1	2	2	2	1	2	1	2
Overall, is WWF liable to make a conservation impact on elephants in this landscape i.e. can threats to elephants be reduced or removed?	3	6	2	6	2	6	1	3	2	6	2	6	2	6	1	3	2	6
B3: Synergies with priority ecoregions and other WWF strategic priorities. Is the landscape also important for WWF biome priorities?	2	4	2	4	1	2	2	4	1	2	1	2	1	2	2	4	1	2
Is there an overlap with WWF priorities for other priority species?	2	4	2	4	2	4	2	4	2	4	0	0	1	2	2	4	1	2
B4: Elephants as flagship species. Is the elephant a suitable flagship species for broader conservation issues in the landscape?	2	2	1	2	1	2	1	2	1	2	2	4	1	2	0	0	1	2
Will other faunal and floral species benefit from the project?	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2
B5: Innovation and catalytic role. Is WWF's work in this landscape likely to have a multiplier effect, leveraging further support or replica initiatives?	2	2	2	2	2	2	1	1	1	1	1	1	2	2	1	1	1	1
B6: Cost-benefit Assessment. Is WWF support for elephant conservation in this landscape likely to be cost effective?	2	4	2	4	2	4	1	2	1	2	2	4	2	4	1	2	1	2
TOTAL SCORE	**26**	**55**	**26**	**55**	**25**	**53**	**23**	**49**	**21**	**44**	**20**	**42**	**21**	**41**	**18**	**38**	**18**	**37**

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

EASTERN AFRICA

Score and score multiplied by weighting for each landscape

Criterion	Question	Weighting	Selous	Mara	Ruaha	Tarangire	Shimba	Samburu	Matumbi	Katavi-Rukwa
SUB-REGIONAL RANK			1	2	3	4	5	6		
AFRICA RANK			4	7	10	14	16	18		
A1: Identified threat.	Is there an identified threat or management issue facing this elephant population that WWF would be able to help address?	Y/N	Y	Y	Y	Y	Y	Y	Y	Y
A2: Population viability.	Is the elephant population in the landscape viable for the long-term (at least 3 elephant generations) if the main threats are reduced or removed?	Y/N	Y	Y	Y	Y	Y	Y	N	Y
	Are conservation measures likely to ensure the survival of adequate elephant habitat in the landscape?	Y/N	Y	Y	Y	Y	Y	Y	?	Y
A3: Feasibility and sustainability.	Is the political and social climate suitable for conservation in this landscape?	Y/N	Y	Y	Y	Y	Y	Y	Y	Y
	Does WWF operate in this landscape or plan to operate in this landscape in the next 2-5 years?	Y/N	Y	Y	Y	Y	Y	?	Y	N
	Does WWF have the capacity to implement elephant work in the landscape?	Y/N	Y	Y	Y	Y	Y	Y	Y	N
B1: Population size, range and representativeness.	Is the population an appropriate size for the intervention? (i.e. is the population large enough to make an intervention worthwhile?)	3	2 6	2 6	2 6	1 3	1 3	2 6		
	Is adequate range and habitat available or potentially available following habitat restoration or range expansion?	3	2 6	2 6	2 6	2 6	1 3	2 6		
	Is the population significant for that sub-species or its habitat?	3	2 6	2 6	2 6	2 6	2 6	2 6		
B2: Conservation impact.	How strong is the political will to conserve the landscape?	1	2 2	2 2	2 2	2 2	2 2	2 2		

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Criterion	L1		L2		L3		L4		L5		L6	
Does WWF have strong capacity to operate (ourselves or through partners) and support elephant conservation in this landscape (due to its current or expected presence)?	3	6	2	6	1	3	1	3	1	3	0	0
Is WWF's involvement necessary to conserve elephants in the landscape (i.e. will we add value)?	1	1	0	0	1	1	1	1	1	1	1	1
Are appropriate partnerships with NGOs and/or government agencies and/or local people likely to develop or expand in this landscape?	2	4	2	4	2	4	2	4	2	4	1	2
Overall, is WWF liable to make a conservation impact on elephants in this landscape i.e. can threats to elephants be reduced or removed?	3	6	2	6	2	6	2	6	1	3	2	6
B3: Synergies with priority ecoregions and other WWF strategic priorities. Is the landscape also important for WWF biome priorities?	2	4	2	4	2	4	1	2	2	4	1	2
Is there an overlap with WWF priorities for other priority species?	2	2	1	2	1	2	0	0	0	0	0	0
B4: Elephants as flagship species. Is the elephant a suitable flagship species for broader conservation issues in the landscape?	2	4	1	2	1	2	2	4	2	4	1	2
Will other faunal and floral species benefit from the project?	1	2	2	2	2	2	2	2	2	2	2	2
B5: Innovation and catalytic role. Is WWF's work in this landscape likely to have a multiplier effect, leveraging further support or replica initiatives?	1	1	1	1	1	1	1	1	2	2	1	1
B6: Cost-benefit Assessment. Is WWF support for elephant conservation in this landscape likely to be cost effective?	2	4	2	4	1	2	1	2	1	2	1	2
TOTAL SCORE	**25**	**54**	**23**	**51**	**22**	**47**	**20**	**42**	**20**	**39**	**18**	**38**

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

SOUTHERN AFRICA

Score and score multiplied by weighting for each landscape

Criterion	Question	Weighting	N Moz-ambique	NW Namibia	KAZA	Luangwa	Greater Limpopo	southern Angola	Zambezi - Lower Zambezi-Zimba-bwe Zambia	Tembe-Maputo (RSA-Moz)
	SUB-REGIONAL RANK		1	2	3	4	5			
	AFRICA RANK		3	6	9	11	21			
A1: Identified threat.	Is there an identified threat or management issue facing this elephant population that WWF would be able to help address?	Y/N	Y	Y	Y	Y	Y	Y	Y	Y
A2: Population viability.	Is the elephant population in the landscape viable for the long-term (at least 3 elephant generations) if the main threats are reduced or removed?	Y/N	Y	Y	Y	Y	Y	?	Y	Y
	Are conservation measures likely to ensure the survival of adequate elephant habitat in the landscape?	Y/N	Y	Y	Y	Y	Y	Y	Y	Y
A3: Feasibility and sustainability.	Is the political and social climate suitable for conservation in this landscape?	Y/N	Y	Y	Y	Y	Y	N	Y	Y
	Does WWF operate in this landscape or plan to operate in this landscape in the next 2-5 years?	Y/N	Y	Y	Y	Y	Y	?	N	Y
	Does WWF have the capacity to implement elephant work in the landscape?	Y/N	Y	Y	Y	Y	Y	N	N	N
B1: Population size, range and representativeness.	Is the population an appropriate size for the intervention? (i.e. is the population large enough to make an intervention worthwhile?)	3	2 / 6	2 / 6	2 / 6	2 / 6	2 / 6			
	Is adequate range and habitat available following habitat restoration or range expansion?	3	2 / 6	2 / 6	2 / 6	2 / 6	2 / 6			
	Is the population significant for that sub-species or its habitat?	3	2 / 6	2 / 6	2 / 6	2 / 6	2 / 6			
B2: Conservation impact.	How strong is the political will to conserve the landscape?	1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 1			

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Question / Criterion											
Does WWF have strong capacity to operate (ourselves or through partners) and support elephant conservation in this landscape (due to its current or expected presence)?	3	2	6	2	6	1	3	1	3	1	3
Is WWF's involvement necessary to conserve elephants in the landscape (i.e. will we add value)?	1	2	2	2	2	1	1	0	0	0	0
Are appropriate partnerships with NGOs and/or government agencies and/or local people likely to develop or expand in this landscape?	2	2	4	2	4	2	4	2	4	1	2
Overall, is WWF liable to make a conservation impact on elephants in this landscape i.e. can threats to elephants be reduced or removed?	3	2	6	2	6	1	3	1	3	1	3
B3: Synergies with priority ecoregions and other WWF strategic priorities. Is the landscape also important for WWF biome priorities?	2	1	4	1	2	2	4	2	4	0	0
Is there an overlap with WWF priorities for other priority species?	2	1	0	1	2	1	2	1	2	0	0
B4: Elephants as flagship species. Is the elephant a suitable flagship species for broader conservation issues in the landscape?	2	2	4	2	4	2	4	1	2	1	2
Will other faunal and floral species benefit from the project?	1	2	2	2	2	2	2	2	2	2	2
B5: Innovation and catalytic role. Is WWF's work in this landscape likely to have a multiplier effect, leveraging further support or replica initiatives?	1	1	2	1	1	2	2	1	1	1	1
B6: Cost-benefit Assessment. Is WWF support for elephant conservation in this landscape likely to be cost effective?	2	2	4	2	4	1	2	1	4	1	2
TOTAL SCORE	**26**	**25**	**54**	**23**	**53**	**23**	**47**	**21**	**45**	**16**	**36**

WESTERN AFRICA

Criterion	Question	Weighting	Tai	Park W	Nazinga	Gourma	Bia	Comoé (Côte d'Ivoire)
SUB-REGIONAL RANK			1	2	3	4	5	
AFRICA RANK			17	23	24	25	26	
A1: Identified threat.	Is there an identified threat or management issue facing this elephant population that WWF would be able to help address?		Y	Y	Y	Y	Y	Y
A2: Population viability.	Is the elephant population in the landscape viable for the long-term (at least 3 elephant generations) if the main threats are reduced or removed?		Y	Y	Y	Y	Y	?
	Are conservation measures likely to ensure the survival of adequate elephant habitat in the landscape?		Y	Y	Y	Y	Y	Y
A3: Feasibility and sustainability.	Is the political and social climate suitable for conservation in this landscape?		Y[1]	Y	Y	Y	Y	N
	Does WWF operate in this landscape or plan to operate in this landscape in the next 2-5 years?		Y	Y	Y	Y[2]	Y	N
	Does WWF have the capacity to implement elephant work in the landscape?		Y	Y	Y	Y	Y	N
B1: Population size, range and representativeness.	Is the population an appropriate size for the intervention? (i.e. is the population large enough to make an intervention worthwhile?)	3	1 / 3	2 / 6	2 / 6	1 / 3	1 / 3	0 / 0
	Is adequate range and habitat available or potentially available following habitat restoration or range expansion?	3	1 / 3	2 / 6	2 / 6	2 / 6	2 / 6	0 / 0

[1] Political problems still exist in Côte d'Ivoire but WWF continues to operate in Tai with strong government support. Therefore, the political and social climate is not expected to curtail support for elephant work.

[2] The only strategic interest for WWF in this landscape is for elephant conservation, since the habitat is outside the organization's global priorities for ecoregions or habitats.

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Criteria		Wt										
	Is the population significant for that sub-species or its habitat?	3	2	6	2	6	2	6	2	6	1	3
B2: Conservation impact.	How strong is the political will to conserve the landscape?	1	1	1	1	1	1	1	1	1	1	1
	Does WWF have strong capacity to operate (ourselves or through partners) and support elephant conservation in this landscape (due to its current or expected presence)?	3	1	3	0	0	0	0	0	0	0	0
	Is WWF's involvement necessary to conserve elephants in the landscape (i.e. will we add value)?	1	2	2	2	2	2	2	1	1	2	2
	Are appropriate partnerships with NGOs and/or government agencies and/or local people likely to develop or expand in this landscape?	2	1	2	1	2	1	2	1	2	1	2
	Overall, is WWF liable to make a conservation impact on elephants in this landscape i.e. can threats to elephants be reduced or removed?	3	1	3	1	3	1	3	1	3	1	3
B3: Synergies with priority ecoregions and other WWF strategic priorities.	Is the landscape also important for WWF biome priorities?	2	2	4	0	0	0	0	0	0	2	4
	Is there an overlap with WWF priorities for other priority species?	2	2	2	0	0	0	0	0	0	0	0
B4: Elephants as flagship species.	Is the elephant a suitable flagship species for broader conservation issues in the landscape?	2	1	2	2	4	2	4	2	4	1	2
	Will other faunal and floral species benefit from the project?	2	2	2	2	2	2	2	0	0	2	2
B5: Innovation and catalytic role.	Is WWF's work in this landscape likely to have a multiplier effect, leveraging further support or replica initiatives?	1	1	1	1	1	1	1	1	1	1	1
B6: Cost-benefit Assessment.	Is WWF support for elephant conservation in this landscape likely to be cost effective?	2	1	2	1	2	1	2	1	2	1	2
TOTAL SCORE		18	36	17	35	17	35	13	29	13	22	0

ANNEX 7: RANKING OF WWF PRIORITY ELEPHANT LANDSCAPES BY SUB-REGION

Implementation of the strategic framework of objectives and key activities in the SAP will be at a landscape level. As recommended in the 2006 programme evaluation (EDG 2006), a range of activities will be implemented at each landscape (rather than having disparate activities across multiple sites). Initial selection of landscapes was based on factors such as sub-regional importance (for elephant populations and broader biodiversity), known conservation needs, range state management plans, and WWF's interests, capacity and strategic priorities. Landscapes were then assessed and scored against WWF's Criteria for Prioritizing Landscapes (section 5.1). Examples of proposed activities are indicative and in no particular order; they will be refined and expanded when projects are developed with the range state authorities and partner agencies. Population data is from the African Elephant Status Report 2007 (Blanc *et al.* 2007).

Note: For the purpose of the analysis, landscapes were based around recognized centres of elephant distribution and populations for which data are presented in the latest African Elephant Status Report (Blanc *et al.* 2007) or which are defined in national or sub-regional management strategies. However, boundaries to each landscape are to be considered flexible at this stage; they will be defined later with input from key local stakeholders as projects and funding proposals are developed. Maps showing the location of each landscape are presented in Annex 8.

Rank		Elephant Landscapes and Range States	Ecoregion (or grouping of ecoregions)	Examples of Proposed or Required Activities	Elephant sub-species; population estimate
Sub-regional	Regional				
Central Africa					
1	1	TRIDOM - Trinational Park of Dja, Odzala, Minkebe (includes Boumba-Bek, Nki, Ivindo, Mwagne. Djouah-Belinga) Cameroon, Republic of Congo, Gabon	North-western Congo Basin moist forests	MIKE, HEC mitigation, corridor management, PA/TFCA management; law enforcement; mitigating impacts of mining development	Core of largest central African population Forest elephants 46,345
2	2	Sangha Trinational (includes Dzanga-Sangha, Nouabale-Ndoki, Lobeke, Mongokele) Cameroon, CAR, Republic of Congo	North-eastern Congo Basin moist forests	MIKE, monitoring and data management, HEC mitigation, corridor management, PA/TFCA management, law enforcement	Forest elephants 8,393
3	5	Gamba Reserve complex Gabon	Atlantic equatorial coastal forests	Monitoring, HEC mitigation, law enforcement; mitigation of oil and gas impacts	Forest elephants 11,205
4	8	Salonga (includes Lukenie and Sankuru) DRC	Central Congo Basin moist	MIKE, HEC mitigation, corridor management, PA management, diversifying community income-generating activities; law enforcement (stopping military poaching)	Forest elephants 3,986

5	Maiko - Kahuzi Biega DRC	Eastern Congo Basin moist forests and Albertine Rift Montane forests	MIKE, HEC mitigation, corridor management, PA management	Forest elephants 3,020
6	Northern savannas (including Faro, Benoué, Bouba-Ndjidah, Waza) Cameroon	East Sudanian savannas	HEC mitigation, law enforcement, MIKE, PA management	Savanna elephants 1,735
7	Campo Ma'an (including Rio Campo) Cameroon-Equatorial Guinea	Atlantic equatorial coastal forests	HEC mitigation, monitoring and law enforcement.	Forest elephants 600?
8	Lac Tele - Lac Tumba DRC	Central Congo Basin moist forests	Monitoring, HEC mitigation, corridor management, PA management, diversifying community income-generating activities; CBNRM; post conflict mitigation	Forest elephants Unknown population
9	Korup - Banyang Mbo - Cross River Cameroon, Nigeria	Atlantic equatorial coastal forests	PA management, CBNRM?	Forest elephants 956
-	Okapi DRC	North-eastern Congo Basin moist forests	PA management, law enforcement, MIKE	Forest elephants 2,688
-	Zakouma – Manova – Gounda - St Floris Chad	East Sudanian savannas	PA management, law enforcement, MIKE	Savanna elephants 3,984
Eastern Africa				
1	Selous (including Kilombero, Mikumi, Niassa corridors) Tanzania	Central and eastern miombo woodlands	HEC mitigation, monitoring, MIKE, law enforcement, WMA development	Core of largest east African population Savanna elephants 71,482
2	Mara - Serengeti (including West Loliondo and Maswa) Kenya, Tanzania	Acacia-savannas	HEC mitigation, PA and corridor management	Savanna elephants 3,954
3	Ruaha - Rungwa (including Piti East) Tanzania	Central and eastern miombo woodlands	PA management, law enforcement	Savanna elephants 36,009
4	Tarangire - Lake Manyara Tanzania	Acacia-savannas	HEC mitigation, corridor management	Savanna elephants 1,338
5	Shimba Hills Kenya	East African coastal forests	HEC mitigation, local over-population, community development/conservation	Savanna elephants 649 - 228 were translocated to Tsavo NP in 2005-6 (P. Omondi, personal communication)

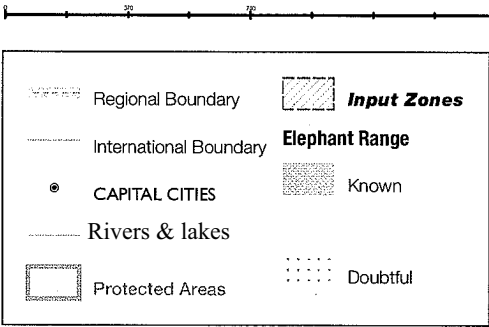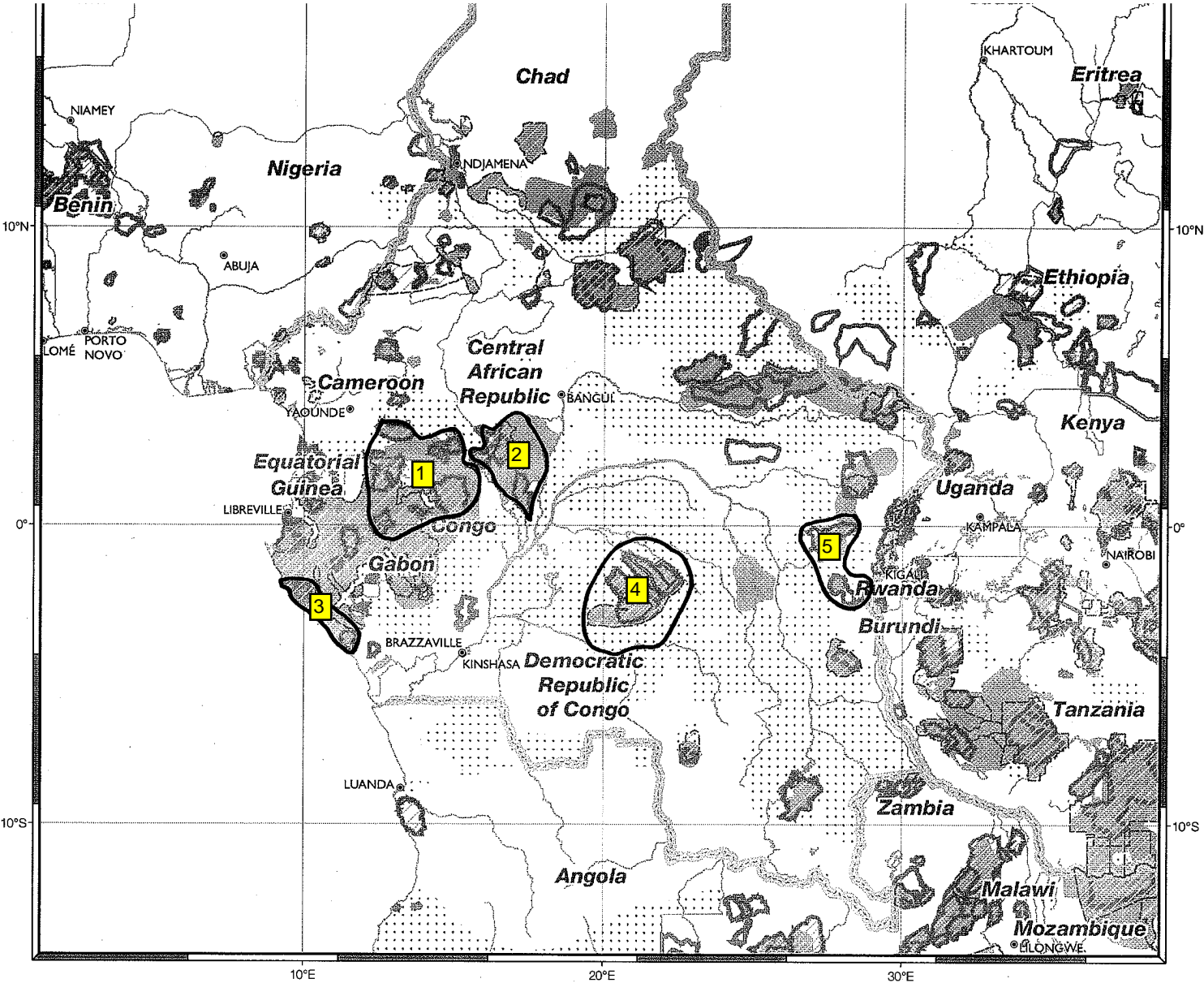*WWF SPECIES ACTION PLAN - African Elephant 2007-2011*

6	18	Samburu - Laikipia Kenya	Acacia-savannas	HEC mitigation	Savanna elephants 5,657
-	-	Katavi-Rukwa Tanzania	Central and eastern miombo woodlands	PA management, law enforcement	Savanna elephants 5,751
-	-	Matumbi - Kichi- Tongomba hills (Rufiji and Kilwa Districts) Tanzania	East African coastal forests	Monitoring, HEC mitigation, law enforcement, awareness raising, corridor management and sustainable agriculture, Village Forest Reserves and WMAs	Savanna elephants unknown
Southern Africa					
1	3	Northern Mozambique (including Cabo Delgado, Niassa, Quirimbas NP) Mozambique	Miombo woodlands + East African coastal forests	Policy, capacity building, HEC mitigation, law enforcement, awareness raising, sustainable agriculture, corridor management	Savanna elephants 15,731
2	6	North-west Namibia (the Kunene-Etosha landscape including neighbouring Omusati and Oshakati regions) Namibia	Kaokoveld desert + Namib escarpment woodlands	Monitoring, HEC mitigation, CBNRM	Savanna elephants 2,267
3	9	Kavango-Zambezi SE Angola, Caprivi Namibia, N Botswana, NW Zimbabwe, S Zambia	Miombo woodlands (central and eastern miombo woodlands)	Complement TFCA work to expand elephant range, PA management, HEC mitigation	Core of largest African elephant population 213,989
4	11	Luangwa Valley Zambia	Miombo woodlands (central and eastern miombo woodlands)	HEC mitigation, CBNRM, PA management	Savanna elephants 9,446
5	21	Greater Limpopo TFCA South Africa, Zimbabwe, Mozambique	Zambezian and mopane woodlands	TFCA management	Savanna elephants 21,548
-	-	southern Angola	Angolan mopane woodlands	Monitoring, HEC mitigation	Savanna elephants Unknown
-	-	Zambezi and Lower Zambezi Zimbabwe, Zambia	Miombo woodlands (central and eastern miombo woodlands)	Complement TFCA work to expand elephant range and reduce HEC	Savanna elephants 22,602
-	-	Tembe - Maptuo (including Futi corridor) South Africa, Mozambique	Drakensberg montane grasslands, woodlands and forests	Corridor management, HEC mitigation	Savanna elephants 367

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

West Africa

1	20	Tai - Grebo (including Goin-Cavally) Côte d'Ivoire, Liberia	Guinean moist forest	Policy, law enforcement, MIKE, awareness, PA management, habitat protection	Forest elephants 353
2	22	Park W - Eastern Burkina Reserves - Pendjari Park - northern Togo Reserves (includes Park W, Aires de l'est, Arly, Pendjari, Koakrana, Kourtiagou, Atakora, Oti Mandori, Keran – sometimes called "WAPOK") Burkina Faso, Benin, Niger, Togo	West Sudanian savanna	Policy, habitat protection, HEC mitigation, anti-poaching, monitoring	Core of largest west African population Savanna elephants 4,553
3	23	Nazinga-Kabore Tambi NP- Red Volta-Doungh (includes Po-Nazinga-Sisslli, Zabré, Red & White Volta-Morago, Mole) Burkina Faso, Ghana, Togo	Sahel	Policy, HEC mitigation, habitat protection and SFM, awareness, PA management	Savanna elephants 1,200
4	24	Gourma - Sahel Mali, Burkina Faso	Sahel	Policy, HEC mitigation, CBNRM, protection, awareness	Savanna elephants 498
5	25	Bia - Goaso - Djambarakrou Ghana, Côte d'Ivoire	Guinean moist forest	Policy, habitat protection and management, HEC mitigation, law enforcement, monitoring, sustainable agriculture	Forest elephants 217
-		Comoé Côte d'Ivoire	West Sudanian savanna	PA management, monitoring	Savanna elephants 10?

ANNEX 8: MAPS SHOWING LOCATION OF WWF PRIORITY AFRICAN ELEPHANT LANDSCAPES IN EACH SUB-REGION

Note: The boundaries of each landscape are indicative. They will be finalized with key stakeholders during the development of landscape conservation programmes.

Central Africa

Legend:
- ...... Regional Boundary
- ------ International Boundary
- ⊛ CAPITAL CITIES
- —— Rivers & lakes
- ☐ Protected Areas
- ▨ Input Zones

Elephant Range
- ▦ Known
- ⋮⋮⋮ Doubtful

WWF Priority Elephant Landscapes in Central Africa:
1: TRIDOM - Trinational Park of Dja, Odzala, Minkebe
2: Sangha Trinational
3: Gamba Reserve complex
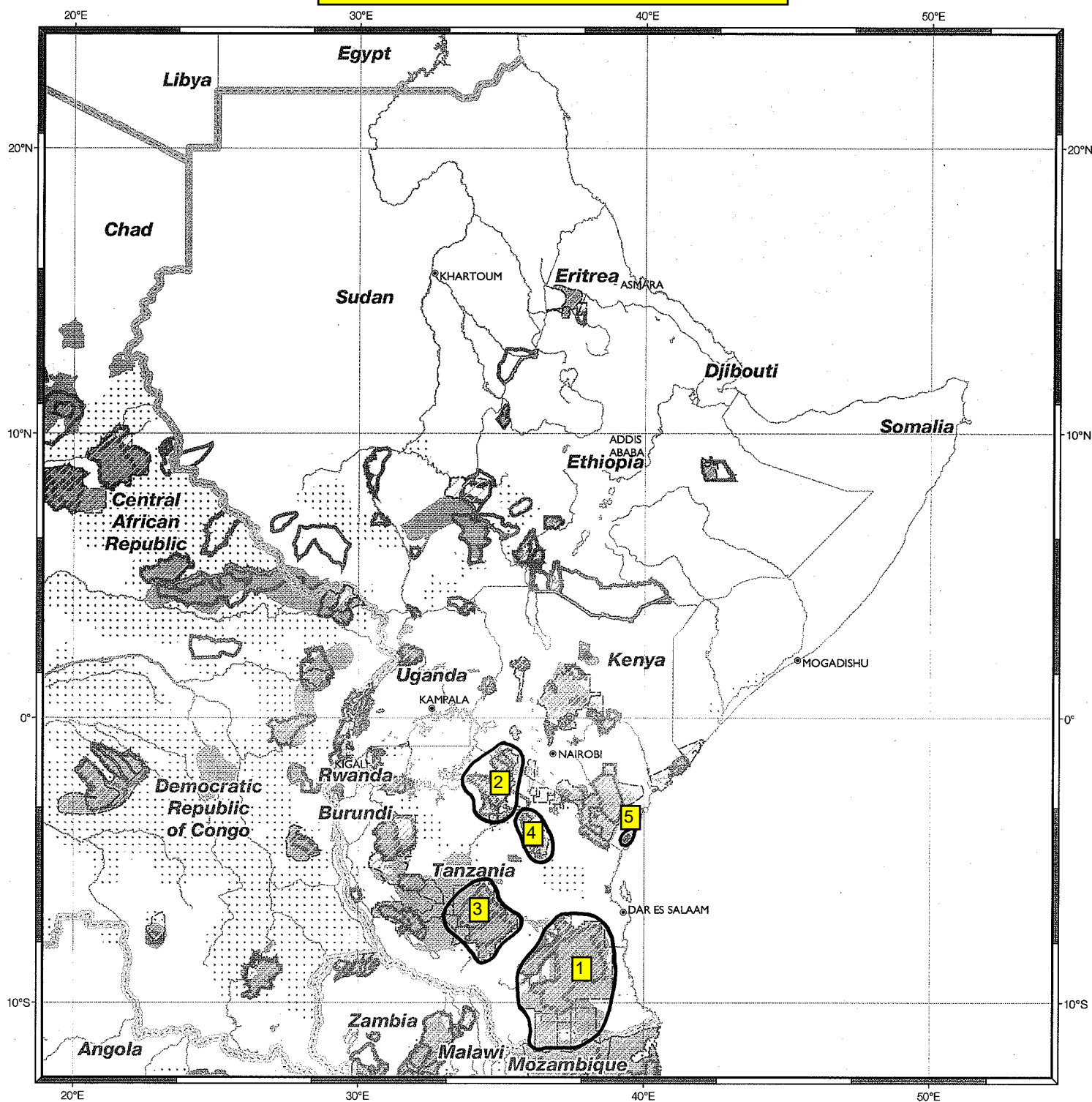4: Salonga
5: Maiko - Kahuzi Biega

African Elephant Specialist Group

Sources:
African Elephant Database
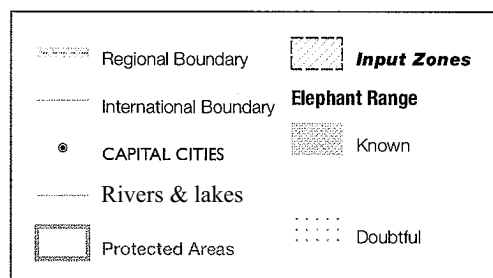Digital Chart of the World

This map is unprojected. Scale is indicative only.

Map adapted from Blanc et al. 2007, courtesy of the IUCN/SSC African Elephant Specialist Group

Eastern Africa

Scale bar: 0 — 350 — 700 — 1,400 km

Legend:
- Regional Boundary
- International Boundary
- CAPITAL CITIES
- Rivers & lakes
- Protected Areas
- Input Zones

Elephant Range
- Known
- Doubtful

WWF Priority Elephant Landscapes in Eastern Africa:
1: Selous
2: Mara-Serengeti
3: Ruaha-Rungwa
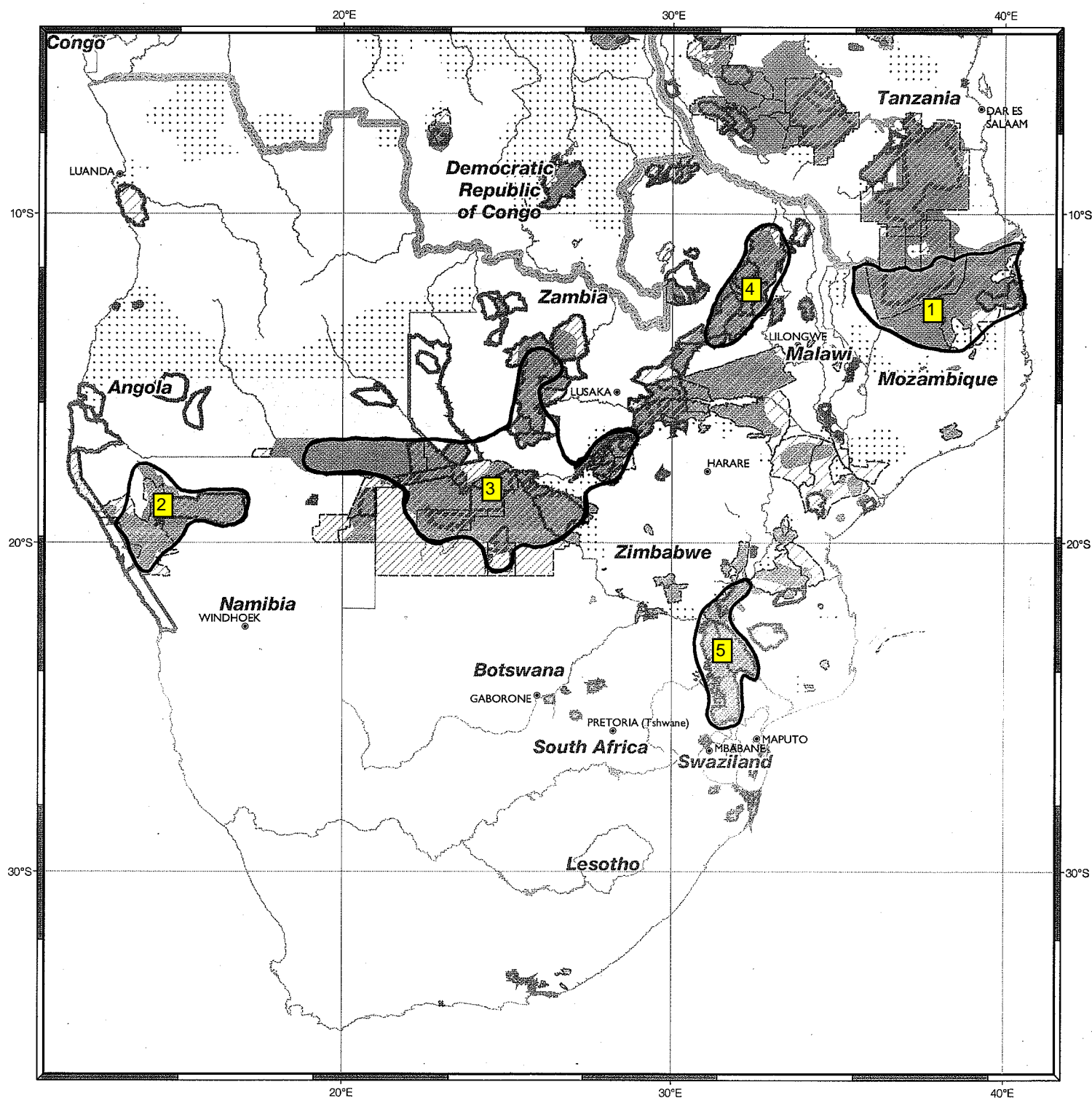4: Tarangire-Lake Manyara
5: Shimba Hills

African Elephant Specialist Group

Sources:
African Elephant Database
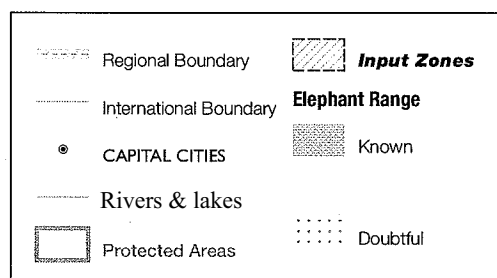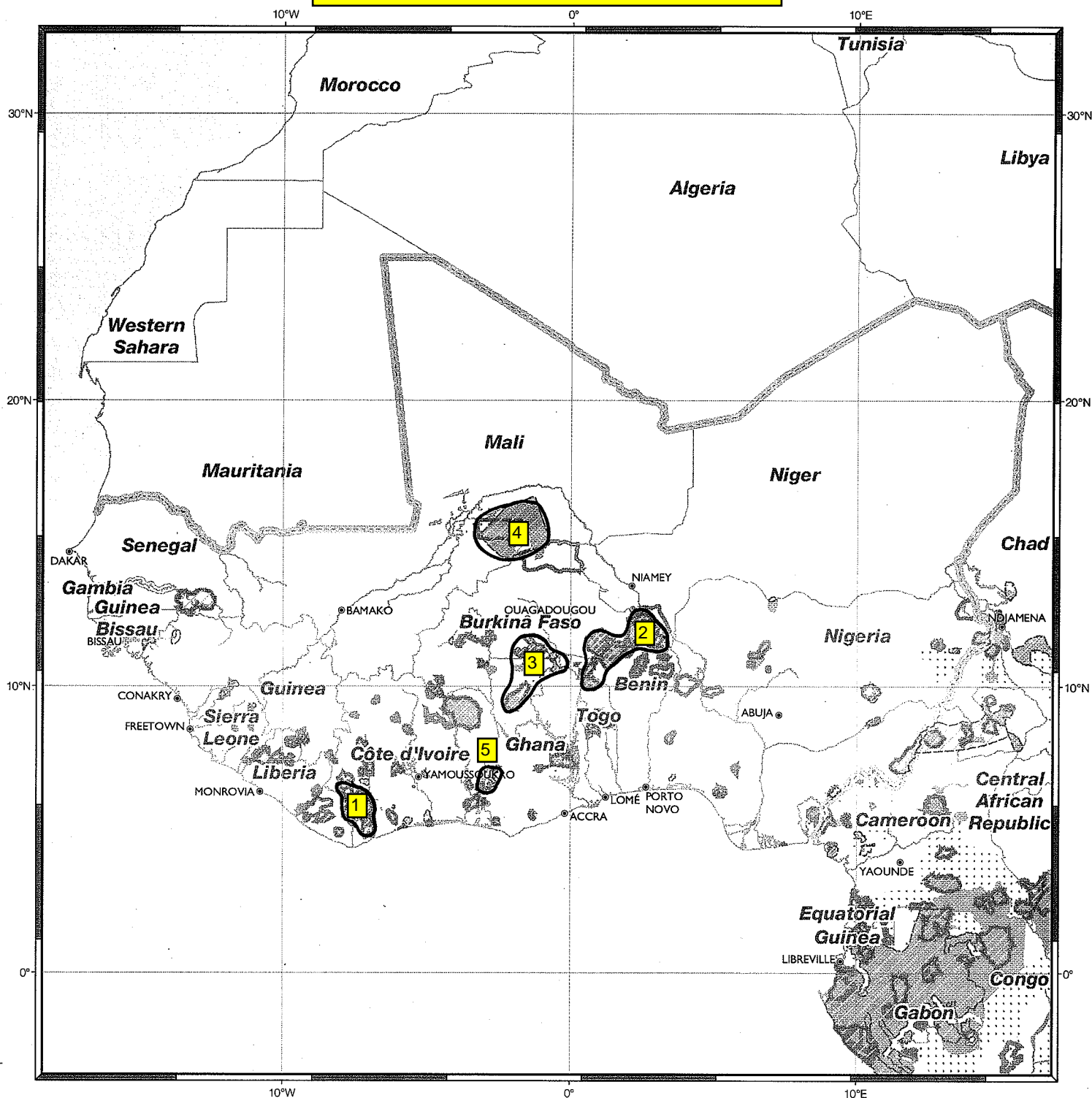Digital Chart of the World

This map is unprojected. Scale is indicative only.

Map adapted from Blanc et al. 2007, courtesy of the IUCN/SSC African Elephant Specialist Group

Southern Africa

Congo

LUANDA

Angola

Democratic
Republic
of Congo

Tanzania

DAR ES
SALAAM

Zambia

LUSAKA

LILONGWE

Malawi

Mozambique

4

1

HARARE

Namibia

WINDHOEK

Zimbabwe

3

2

Botswana

GABORONE

PRETORIA (Tshwane)

South Africa

Swaziland

MBABANE

MAPUTO

5

Lesotho

0   300   600   1,200 km

WWF Priority Elephant
Landscapes in Southern
Africa:
1: Northern Mozambique
2: North-west Namibia
3: Kavango-Zambezi
4: Luangwa Valley
5: Greater Limpopo

African Elephant
Specialist Group

Regional Boundary

International Boundary

CAPITAL CITIES

Rivers & lakes

Protected Areas

Input Zones

Elephant Range

Known

Doubtful

Sources:
African Elephant Database
Digital Chart of the World

This map is unprojected.
Scale is indicative only.

Map adapted from Blanc et al. 2007, courtesy of
the IUCN/SSC African Elephant Specialist Group

56

West Africa

WWF Priority Elephant Landscapes in West Africa:
1: Tai - Grebo
2: Park W - Eastern Burkina Reserves - Pendjari Park - northern Togo Reserves
3: Nazinga-Kabore Tambi NP- Red Volta-Dough
4: Gourma - Sahel
5: Bia - Goaso - Djambarakrou

African Elephant Specialist Group

Legend:
- Regional Boundary
- International Boundary
- CAPITAL CITIES
- Rivers & lakes
- Protected Areas
- **Input Zones**
- **Elephant Range**
  - Known
  - Doubtful

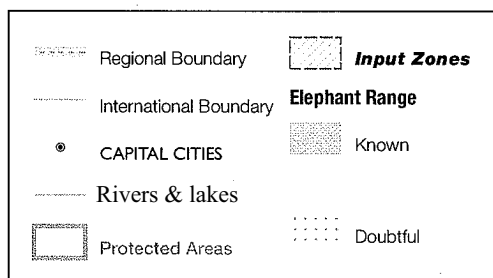Sources:
African Elephant Database
Digital Chart of the World

This map is unprojected. Scale is indicative only.

Map adapted from Blanc et al. 2007, courtesy of the IUCN/SSC African Elephant Specialist Group

ANNEX 9: PLANNING TERMINOLOGY

The following table explains the planning terminology used by WWF's Species Action Programmes since 2006.

Term	Description
SAP Vision (or long term goal)	• Timeframe: 25-50 years • Relates to the species throughout its range • Is the same for the SAP and its sub-components (sub-SAPs or projects)
SAP Goal	• These are true impacts at the biological level • Defines the scope/focus of the work: i.e. priority population, landscape, or ecoregion • Defines what WWF and its implementation partners are doing • Should relate to realistic funding levels • Timeframe should be well defined, usually lying between 5 and 10 years • Goal does not need to be SMART but needs at least one mandatory, measurable direct or indirect indicator on the status of the species
Categories of Objective (previously Standard Objectives) • Policy • Habitats • Populations • Incentives • Awareness	• Thematic groupings of targets by methods or tools (reflecting the nature, expertise and strength of the participating organizations) • These are not SMART because they are describing processes • But they require one key indicator on threat reduction level
SAP Objectives (previously SAP Targets)	• Backbone of a SAP: to be delivered within specified time • Performance of SAPs (and their co-ordinators) to be judged against it • Must be grouped according to Categories of Objective • Must be SMART - i.e.: **S**pecific (who, what, where, when, how, etc.); **M**easurable (quantifiable); **A**chievable (within known constraints, considerations and assumptions); **R**elevant (pertinent to the objective or goal for which it has been selected); **T**ime-bound (determined time-frame for the target's achievement). • Must have indicators/measurement of
	progress along the way to achieving the Objective (previously SAP milestones) • Objectives will usually relate to changes in the scope, extent and magnitude of threats (pressure reduction)
SAP Activities	• Actions taken, usually on a one year basis and closely linked to the operational budget, in order to achieve the relevant target • These are our immediate "responses" to a threat • Do not need to be articulated in the SAP Annual work plan (including all activities) required for each individual SAP (or its sub-components) • Must be directly tied to the available, identified budget

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ANNEX 10: OUTLINE PROGRAMME BUDGET, JANUARY 2007 TO DECEMBER 2011

Item	Cost (CHF)						
	FY07 6 mo	FY08 12 mo	FY09 12 mo	FY10 12 mo	FY11 12 mo	FY12 6 mo	TOTAL 5 years
Delivery on Objectives							
1.1 The development and application of policies and legislation that create an enabling environment for elephant conservation facilitated in 13 range states by 2011	50,000	200,000	200,000	200,000	200,000	100,000	950,000
2.1 Elephant habitat conserved effectively in order to increase range and connectivity between populations (including transboundary populations) in 14 landscapes by 2011	200,000	400,000	500,000	500,000	400,000	200,000	2,200,000
3.1 Illegal killing of elephants reduced by at least 30% in 12 landscapes by 2011	200,000	400,000	400,000	400,000	400,000	200,000	2,000,000
3.2 Illegal trade in major elephant product markets reduced by at least 50% in 9 African states and 2 Asian states by 2011	90,000	120,000	120,000	100,000	100,000	75,000	605,000
4.1 Human-elephant conflict reduced by at least 40% in pilot sites in 18 landscapes by 2011	60,000	240,000	240,000	240,000	180,000	60,000	1,020,000
4.2 The livelihoods of people living alongside elephants are improved through economic development activities linked to wildlife conservation in 20 landscapes by 2011	150,000	300,000	300,000	300,000	300,000	150,000	1,500,000
5.1 Public support for, and participation in, elephant conservation increased in 20 landscapes by 2011 through increased awareness of policies, laws, options and benefits	50,000	200,000	200,000	200,000	200,000	100,000	950,000
Co-ordination Costs							
Staff costs:- co-ordinator, administrator, 40% comms officer, PFA time	60,000	194,000	194,000	200,000	200,000	100,000	948,000
Operating budget:- office running, travel, meetings, etc	30,000	90,000	90,000	100,000	100,000	50,000	460,000
Admin fees (12.5% as per WWF Standards)	111,250	268,000	280,500	280,000	260,000	129,375	1,329,125
TOTAL	*1,001,250*	*2,412,000*	*2,524,500*	*2,520,000*	*2,340,000*	*1,164,375*	**11,962,125**

Budget Notes: This budget provides an outline of expected costs if new initiatives are started to address all SAP objectives. It is broken down into WWF financial years (FY) which run from July to June. Expenses will be reduced if projects are integrated into existing initiatives. Funds for the budget will be raised within the WWF Network, with matching funds from external donors and partners.

ANNEX 11: PROGRAMME FRAMEWORK

SAP VISION:
In 25 years time, forest and savanna elephants continue to roam across Africa in landscapes where people and wildlife flourish alongside each other.

SAP GOAL:
By 2017, protection and management of key African elephant populations and their habitats in 20 landscapes is improved

Indicators of Goal: Area of known elephant range; Area of elephant habitat cover; Elephant population numbers

OBJECTIVES AND KEY ACTIVITIES

NB: Objectives are specific, measurable, achievable, relevant and time-bound. The full name of each target landscape is provided in Annex 7. Target landscapes are indicated for each objective but final implementation may occur in alternate landscapes, depending on evolving data, situations and opportunities.

Category of Objective	1. POLICY. To improve relevant policy and legislation in all sectors and at all levels	2. HABITATS To ensure the necessary extent, integrity and functioning of critical habitats [quantity, quality, management]	3. POPULATIONS To ensure adequate protection and biological management of populations		4. INCENTIVES To generate mutually beneficial incentives for the co-existence of people and species	5. AWARENESS To create awareness and influence adverse attitudes and behaviour
SAP Objectives	**1.1** The development and application of policies and legislation that create an enabling environment for elephant conservation facilitated in 13 range states by 2011	**2.1** Elephant habitat conserved effectively in order to increase range and connectivity between populations (including transboundary populations) in 14 landscapes by 2011	**3.1** Illegal killing of elephants reduced by at least 30% in 12 landscapes by 2011	**3.2** Illegal trade in major elephant product markets reduced by at least 50% in 9 African states and 2 Asian states by 2011	**4.1** Human-elephant conflict reduced by at least 40% in pilot sites in 18 landscapes by 2011	**5.1** Public support for, and participation in, elephant conservation increased in 20 landscapes by 2011 through increased awareness of policies, laws, options and benefits
					4.2 The livelihoods of people living alongside elephants are improved through economic development activities linked to wildlife conservation in 20 landscapes by 2011	

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Targets of Objectives	Target range states would include: Burkina Faso, Cameroon, CAR, Congo, Côte d'Ivoire, DRC, Gabon, Kenya, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe	Target landscapes include TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Northern Mozambique, KAZA, Greater Limpopo, Tai, Park W, Nazinga	Target landscapes include: TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Ruaha, Northern Mozambique, Luangwa, Tai, Park W, Nazinga	Target states include: Angola, Cameroon CAR, Côte d'Ivoire, DRC, Mozambique, Nigeria, Senegal Sudan. China, Japan	Target landscapes include: TRIDOM, Sangha, Gamba, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia, KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia	Target landscapes include: TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia. KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia.	Target landscapes include: TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia. KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia
Indicators of progress against SAP objectives	Number of states with appropriate policies, legislation and action plans Number of range states adhering to Conventions & MEAs Number of companies with environment policies	Area of habitat cover Area of habitat under protection PA Management effectiveness (as measured by scorecards)	Trend of illegal off take Law enforcement effectiveness per unit effort	Levels of ivory trade in major markets Number and volume of ivory seizures	Level of conflict (fields raided, area of crops lost, people hurt, infrastructure destroyed) Financial costs of HEC (cost of crops and infrastructure lost) Number of elephants killed in PAC operations	Benefits derived from elephants: - household incomes - PA gate receipts)	Perceived importance of conservation to local people Number of people engaged with WWF projects and implementing WWF tools and methods
Assumptions/ Risks	- Range state governments continue to demonstrate a commitment to the conservation of elephants and their habitats - Governments and local communities	- Range state governments continue to demonstrate a commitment to the conservation of elephants and their habitats - Protected areas and corridors large	- Range state governments continue to support anti-poaching forces - Economic and political stability in range states of intervention - Support from judiciary and police	- Governments demonstrate political will to stop ivory moving illegally on to the international market - Support from judiciary, police and customs for enforcing wildlife	- Communities willing to work with HEC methods and participate in project activities - Continued commitment by wildlife authorities to mitigate HEC - Rotational use of a	- Governments and local communities prepared to assign responsibility for elephant issues to individuals - Local people accrue benefits from community-based wildlife/natural	- Increased knowledge of elephant issues causes people to change their attitudes and behaviour - Media continue to be receptive to elephant-related

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
	stories	resource management schemes - Governments and local communities support elephant conservation strategies and plans	diversity of strategies avoids significant elephant habituation to local deterrents	trade regulations - Governments continue support for CITES ETIS - Economic and political stability in range states of intervention	for enforcing wildlife regulations - Range state governments committed to protecting elephant habitat	enough to maintain viable herds of elephants in target landscapes - Economic and political stability in range states of intervention	support elephant conservation strategies and plans - Governments willing to change laws to improve elephant/wildlife/habitat conservation - Governments willing to devolve land-use rights to local people for CBNRM/SFM
Key Activities	• Establish and implement an Information, Education, Communications (IEC) campaign on elephant issues with target groups (including CBOs, school children, media, users of elephant products within and outside Africa, and key decision-makers e.g. civil servants, local government officials, judiciary) • Building on traditional beliefs and relationships between people and elephants, raise awareness on the importance of	• Support implementation of CBNRM schemes (taking account of lessons learned from existing programmes) where local people benefit from wildlife in elephant range • Conduct feasibility studies and implement pilot projects in wildlife-based tourism to provide revenue for local people • Establish appropriate private sector partnerships to enhance opportunities for local communities to realise tourism benefits	• Develop new field and policy tools for improving HEC monitoring and mitigation • Field test modern methods for HEC monitoring and mitigation, and measure impacts of HEC mitigation on local livelihoods • Replicate successful HEC pilot projects in remaining priority landscapes • Train wildlife management authorities and local people in HEC mitigation • Develop programmes with	• Monitor domestic ivory markets and lobby for study recommendations to be implemented in Africa and Asia • Train and equip law enforcement officers (e.g. customs, police) to monitor and tackle illegal wildlife trade and help implement the CITES Action plan for the control of domestic trade in ivory in collaboration with TRAFFIC • Improve implementation of ETIS and data reporting in range states in collaboration with TRAFFIC	• Train and equip anti-poaching staff (e.g. park guards, community game guards) to increase area and frequency of surveillance coverage • Monitor anti-poaching success per unit effort • Develop capacity for MIKE implementation and provide support for regular population censuses • Support the development and operation of key elephant databases (e.g. African Elephant Database, MIKE) to provide information on	• Promote the creation of new national and transboundary protected areas (to expand elephant range, increase habitat protection and reduce local over-population) • Improve management effectiveness in PAs and TFCAs (including reduction of logging, mining, hunting and settlement) • Conduct studies into elephant movements and habitat use across seasons to identify corridors required for connectivity and	• Help revise national legislation to adapt to international environment conventions and multi-lateral environment agreements, and to provide an enabling environment for elephant conservation (e.g. HEC mitigation, CBNRM, benefit sharing, ivory trade controls, transboundary harmonization) • Collaborate with UNEP and CITES in the development and implementation in African elephant range states of a framework for

reviewing national wildlife policy • Develop, implement and monitor participatory land use plans with stakeholders to conserve buffer zones and corridors and reduce HEC • Support the elaboration, implementation and monitoring of 3 sub-regional elephant management plans (central, southern, western) and 8 national elephant management plans (Cameroon, CAR, Congo, DRC, Gabon, Kenya, Mozambique, Tanzania) ensuring transboundary collaboration is promoted. • Lobby for the integration of sub-regional plans into sub-regional planning processes (e.g. CAECS into Plan de Convergence for the Congo Basin; SAECS into	to improve anti-poaching patrols • Establish land use plans for elephant corridors between protected areas to maximize connectivity, prevent encroachment and reduce HEC • Develop initiatives with the private sector to monitor and reduce the impacts of extractive industries (mining, logging, agribusinesses, etc) on elephants and their habitats - including promotion of best practices and SFM in logging companies • Provide tools (e.g. best practice guidelines) for management of TFCAs and integration of local people into PA management • Conduct climate vulnerability assessments for elephant populations in Africa and use the results to	elephant numbers, poaching levels and poaching impacts.	• Investigate the sustainable use of DNA markers and other tools to identify sources of illegal ivory and improve ETIS reporting • Identify the impact of the bushmeat trade on elephants and develop initiatives to curb the problem (especially in C. Africa).	stakeholders from all levels for the national "vertically integrated" management of HEC (concentrating not only on field-level mitigation measures but also encompassing relevant higher-level policy issues such as compensation, land use planning, land tenure, and equitable benefit sharing • Organize workshops and disseminate publications to encourage the transfer and sharing of experiences, expertise, skills and knowledge on HEC between sites, countries, sub-regions and continents.	• Establish pilot projects that use appropriate and sustainable agricultural practices in elephant habitat to increase farmers' yields and profits but reduce conflict with elephants • Set up community-based schemes to diversify income-generating activities away from extractive or illegal activities such as hunting and logging • Implement participatory rural appraisal system for monitoring livelihood benefits directly accrued by local people from CBNRM/SFM and other revenue generating schemes • Assess lessons learned from revenue-generating projects linked to elephants and disseminate results to people involved with developing new initiatives.	conserving elephants. • Raise awareness among ivory buyers, sellers and carvers about legislation relating to trade in elephant products. • Raise awareness of local people living alongside elephants of key opportunities relating to wildlife management (e.g. tourism, HEC mitigation support, etc) • Monitor community views and opinions (in target groups) on elephant management and conservation to measure the impacts of the IEC work • Provide communications tools (website, newsletters, brochures, position statements, simplified explanations of wildlife laws etc) to allow others to replicate IEC

SADC and TFCA development) and the allocation of government funding for implementation ● Develop and implement cooperative agree-ments between states for conser-vation and manage-ment of trans-boundary elephant populations ● Support development of appropriate policies for addressing local over-population of elephants by promulgating WWF positions, disseminating existing technical guidelines on translocation and local over-population, and helping develop and test non-lethal tools.	develop and implement climate change adaptation strategies for landscapes identified as being at high risk ● Use appropriate scorecards to measure protected area management effectiveness ● Develop joint habitat protection initiatives with forest and freshwater conservation programmes and explore options for using schemes such as Payment for Environmental Services ● Implement monitoring system with partners to assess regularly the level of habitat cover and habitat quality in target landscapes.		campaigns, and facilitate implementation of sub-regional IEC campaigns on elephants and key management issues (over-population, HEC, etc)

ANNEX 12: OUTLINE PROGRAMME MONITORING PLAN

Note: Monitoring costs will be built into the overall AEP co-ordination budget and individual project budgets. A full monitoring plan with baseline data will be compiled by the AEP Co-ordinator in 2007.

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
Goal By 2017, elephant populations and their habitat cover are stable or increasing in 20 landscapes.								
What is the status of elephant habitats and elephant populations?	Area of known elephant range	AfESG database	20 top priority landscapes.	Every 2-3 years	IUCN/SSC AfESG	AEP Co-ordinator; Project executants	Baseline population data available for sites in all landscapes, but quality variable.	Increase or stabilization of known range
	Area of elephant habitat cover	Remote sensing of habitat cover			Project teams; Forest departments		Data for additional sites, and habitat cover data, to be collected and analysed in first year.	Increase or stabilization of are of habitat cover
	Elephant population numbers	Range state population censuses; MIKE survey data			Wildlife departments; project managers; MIKE			Increase or stabilization of total elephant population across landscapes
Objective 1.1 The development and application of policies and legislation that create an enabling environment for elephant conservation facilitated in 12 range states by 2011								
What progress is being made towards creating a suitable enabling environment for elephant conservation?	Number of states with appropriate policies, legislation and action plans	Government Ministries	Burkina Faso, Cameroon, CAR, Congo, Côte d'Ivoire, DRC, Gabon, Kenya, Mozambique, South Africa, Tanzania, Zambia, Zimbabwe	Assessed every year	Government Ministries; Programme Offices	AEP Co-ordinator; Sub-regional and Country Representatives	Database of existing legislation, policy and action plans in target range states to be compiled in mid 2007	More countries implement policies that provide enabling environment for elephant conservation;
	Number of range states adhering to Conventions & MEAs	Government Ministries; Convention Secretariats			Government Ministries; Convention Secretariats			More range state adhere to Conventions and Multilateral Environment Agreements

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
	Number of companies with environment policies	Company reports; Partner meetings			Partner companies			More companies have environmentally-friendly policies and practices

Objective 2.1 Elephant habitat conserved effectively in order to increase range and connectivity between populations (including transboundary populations) in 14 landscapes by 2011

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
Is elephant habitat being conserved effectively?	Area of habitat cover	Remote sensing of habitat cover;	TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Northern Mozambique, KAZA, Greater Limpopo, Tai, Park W, Nazinga	Every 2-3 years	Project teams; Forest departments	AEP Co-ordinator; Project executants; PA Managers	Very limited baseline data. Full assessment of available data to be conducted in mid 2007 and data collection to start soon afterwards.	Increase or stabilization of habitat cover;
	Area of habitat under protection	Government decrees for new PAs;			Government environment ministries			Increase in area covered by PAs
	PA Management effectiveness (as measured by scorecards)	PAME assessments			PA Managers; Project Executants;			Increase in PAME

Objective 3.1 Illegal killing of elephants reduced by at least 30% in 12 landscapes by 2011

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
Are anti-poaching efforts in target landscapes having an impact?	Trend of illegal off take	MIKE survey data;	TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Ruaha, Northern Mozambique, Luangwa, Tai, Park W, Nazinga	Annually	Wildlife & PA authorities MIKE; Project Executants	AEP Co-ordinator; Project executants; PA managers; Law enforcement teams	Baselines available for sites in 9 landscapes. Full assessment of available data to be conducted in mid 2007 and data collection to start soon afterwards.	Decrease in incidents of poaching; Decrease in number of illegally killed elephants.
	Law enforcement effectiveness per unit effort	MIKE reports; Law enforcement patrol reports			Wildlife & PA authorities MIKE; Project Executants			Improved efficiency of anti-poaching patrols

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
Objective 3.2 Illegal trade in major elephant product markets reduced by at least 50% in 9 African states and two Asian states by 2011								
Are the illegal ivory markets being controlled?	Levels of ivory trade in major markets	Domestic ivory market studies;	Angola, Cameroon CAR, Côte d'Ivoire,	Annually	TRAFFIC	AEP Co-ordinator; TRAFFIC; CITES Secretariat; Law enforcement authorities	Recent markets data available for 7 states. Seizure data in last ETIS report to CITES (May 2007): Full assessment of available data to be conducted in mid 2007 and data collection to start soon afterwards.	Decrease in scale of domestic ivory markets; Reduction in number and volume of ivory seizures
	Number and volume of ivory seizures	ETIS reports	DRC, Mozambique, Nigeria, Senegal Sudan. China, Japan		TRAFFIC; CITES Secretariat			
Objective 4.1 Human-elephant conflict reduced by at least 40% in pilot sites in 18 landscapes by 2011								
Is HEC being reduced across target landscapes?	Level of conflict (fields raided, area of crops lost, people hurt, infrastructure destroyed)	HEC monitoring (using standard protocols) at each project site;	TRIDOM, Sangha, Gamba, Selous, Mara, Ruaha, Tarangire, Shimba, Northern Mozambique, NW Namibia, KAZA, Luangwa, Greater Limpopo, Tai, Park W, Nazinga, Gourma, Bia	Annually	Project Executants; Wildlife authorities	AEP Co-ordinator; Project executants; PA managers; Law enforcement teams and wildlife authorities	Baseline HEC data available for sites in x landscapes: Full assessment of available data to be conducted in mid 2007 and data collection to start soon afterwards.	Reduced levels of conflict
	Financial costs of HEC (cost of crops and infrastructure lost)	HEC monitoring; Participatory rural appraisals			Project Executants; PRA consultants			Reduced costs of conflict;
	Number of elephants killed in PAC operations	Wildlife authority reports on PAC			Wildlife authorities			Fewer elephants shot on PAC operations

WWF SPECIES ACTION PLAN - African Elephant 2007-2011

Objective 4.2 The livelihoods of people living alongside elephants are improved through economic development activities linked to wildlife conservation in 20 landscapes by 2011

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
Are local people and protected areas benefiting from elephant conservation?	Benefits derived from elephants (household incomes; PA gate receipts)	Participatory rural appraisals at each project site showing household incomes and attitudes; PA management authorities	TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Taran-gire, Shimba, N Mozambique, NW Namibia. KAZA, Luangwa, Greater Lim-popo, Tai, Park W, Nazinga, Gourma, Bia.	2007 then every 2 years	Project executants; PRA Consultants; PA Managers	AEP Co-ordinator; Project executants; PA managers;	Baseline data needs to be collected in the first year.	Increased household incomes from elephant-related projects; Increased willingness of local people to support conservation

Objective 5.1 Public support for, and participation in, elephant conservation increased in 20 landscapes by 2011 through increased awareness of policies, laws, options and benefits

Information Needs	Indicators	Methods/sources	Location	When	From who	Used by who	Baseline data	Desired result
Are more people supporting elephant conservation through improved attitudes and behavioural responses?	Perceived importance of conservation to local people	Participatory rural appraisals at each project site showing attitudes and practices;	TRIDOM, Sangha, Gamba, Salonga, Maiko, Selous, Mara, Ruaha, Taran-gire, Shimba, N Mozambique, NW Namibia. KAZA, Luangwa, Greater Lim-popo, Tai, Park W, Nazinga, Gourma, Bia.	2007 then every 2 years	Project executants; PRA Consultants	AEP Co-ordinator; Project executants; PA managers;	Baseline data needs to be collected in the first year.	More people with positive attitudes towards elephant conservation
	Number of people engaged with WWF projects and implementing WWF tools and methods	Project reports on community-based work			Project executants;			More people actively involved with WWF project activities

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