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Larger than elephants

Inputs for the design of an EU strategic approach to Wildlife Conservation in Africa

Volume 6
Additional sections : Elephants, Rhinos, Trade, Migratory birds, Madagascar

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Northern White Rhinos in the Garamba National Park and World Heritage Site, Democratic Republic of Congo. The last sighting in the Park was in 2007, with the last sighting anywhere reported from the Domaine de Chasse in 2012. The sub-species is now almost certainly extinct in the wild, with only 5 surviving in captivity © Kes and Fraser Smith

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0 RATIONALE

The impetus for developing the strategic approach proposed in these volumes has come from the growing global awareness of a wildlife crisis in Africa. Although the much publicised plight of the African elephant and rhino has placed the issue at the forefront of international debate, conservation practitioners working on the ground in Africa have known for a long time that the wildlife crisis is by no means limited to a few iconic African wildlife species which are only the visible portion of an iceberg that hides a steady erosion of wildlife over a wide range of species in all biomes. The scale of the wildlife crisis is immense and one of the main aims of this document is to underline (a) just how much needs to be done and why, (b) what are likely to be the most realistic and effective strategic priorities for saving Africa's wildlife heritage, given the rate of human population growth and associated habitat loss. It is also hoped that the document will serve as a way of federating the different wildlife conservation actors, both within and outside Africa, around a balanced series of common themes.

One of the key points that emerges from the following is that the pressure on land and natural resources in Africa has increased conspicuously in recent decades, and is set to increase considerably more as a result of ongoing demographic and economic trends; more than ever before, Protected Areas have to be at the heart of any strategic approach to wildlife conservation as these are the areas where the most intact assemblages of Africa's wildlife are found. A second key point is that African people living in wildlife-rich areas need to have tangible benefits in the preservation of Africa's wildlife if they are (a) to accept the costs of living with it and (b) be able to continue using it sustainably. Thirdly, efforts to tackle the international illegal trade require concerted actions to stop the killing, stop the trafficking and stop the demand for wildlife and forest products. Fourthly, good quality and up-to-date information is essential in order to inform the choice of strategic options and monitor outcomes. Lastly, all of the above will require a whole raft of institutional, policy and legal improvements or changes to occur in parallel.

Combining the above considerations brings us to an overall objective, or desired outcome, for the strategic approach to wildlife conservation:

> **A full suite of viable populations of the unique wildlife heritage of Sub-Saharan Africa maintained in healthy, functioning and resilient ecosystems supporting livelihoods and human development.**

Thus the strategic approach developed herein is primarily targeted at the conservation of large functioning ecosystems or landscapes supporting key African wildlife populations. It contributes to wider goals of biodiversity conservation by, for example, protecting many small areas of outstanding importance to particular threatened taxa where those small areas fall within larger conservation landscapes. A secondary tactic supporting wider biodiversity goals is to make conservation funds available to agencies and projects protecting small important sites that cannot be contained in the large key landscapes identified.

The Strategic Approach to Wildlife Conservation in Africa is presented in six volumes as follows:

Volume 1: Synopsis
Volume 2: Southern Africa
Volume 3: Eastern Africa
Volume 4: Central Africa
Volume 5: Western Africa
Volume 6: Additional Sections – Elephants, Rhinos, Trade, Madagascar, Migratory Birds

The first five volumes are each arranged according to six chapters (following an Executive Summary): 0. Rationale; 1. Special Features of the Region; 2. Conservation Challenges and Issues; 3. Ongoing Conservation Efforts; 4. Lessons Learnt and Promising Approaches; and 5. Indicative Conservation Actions. A somewhat different format is found in Volume 6 which begins with three chapters (Elephants, Rhinos, Trade) that relate to the wildlife crises currently affecting elephants, rhinos, numerous 'bushmeat' species including many rare forest specialist species, and various plants and trees that have market value. These three chapters contain relevant background information and strategic approaches aimed at stopping the killing, the trafficking and the demand. There is a separate chapter on Madagascar because of its unique conservation status and geographic isolation. A fifth chapter introduces priorities for bird conservation, highlighting the coordinated conservation of European-African bird migrations. An annex provides additional information on various other wildlife groups (including fish, amphibians, insects, large carnivores and great apes) that warrant special mention.

We recognise that the wildlife crisis is not confined to the terrestrial environment and that marine ecosystems are also critically impacted by unsustainable harvesting. Furthermore, we are aware that issues relating to the impoverishment of the marine environment are as far reaching as those of the terrestrial environment. A separate, but linked, strategic approach is therefore required for marine ecosystems. Similarly a separate but linked strategic approach may be required for conservation of freshwater ecosystems which recognizes unique elements of the aquatic fauna. Some freshwater ecosystems are incorporated into this strategy, particularly those wetlands that have importance for water birds, or as terrestrial ecosystems in their own right (such as Okavango Delta, swamp forest areas in Central Africa, Rift Valley Lakes, the Sudd, Lake Chad, Senegal Delta and Inner Niger Delta), or have exceptional importance for biodiversity (Lakes Malawi and Tanganyika for example).

The European Union wishes to assist in building an inclusive strategic approach to the conservation of African wildlife that involves all political and organisational stakeholders working for the benefit of Africa, its wildlife heritage and its peoples. This document may be viewed as a first step in the process of building a consensus, after which the various strategic elements proposed will need to be translated into action through a series of programmes and projects for which detailed results and indicators will have to be developed and rigorous performance monitoring and accountability measures applied. Through cooperation we trust that the long-term future of African wildlife can be secured and that this will be done in such a way as to provide greatest benefits to the nations and peoples of Africa, and not least to the local people who live alongside and within some of the most spectacular wild ecosystems on the planet. The natural heritage of Africa greatly enriches the global natural heritage and we hope this strategic approach to its conservation will encourage others to adopt compatible strategic approaches in other regions.

1 SECTION 1. INTER-REGIONAL SECTION ON ELEPHANTS

ACRONYMS

AEAP	African Elephant Action Plan
AECF	African Elephant Conservation Fund
AED	African Elephant Database
AEF	African Elephant Fund
AEFSC	African Elephant Fund Steering Committee
AES	African Elephant Summit
AESR	African Elephant Status Report
AfESG	African Elephant Specialist Group (of SSC)
ANPN	Agence Nationale des Parcs Nationaux (Gabon)
AsRSG	Asian Rhino Specialist Group
AWF	African Wildlife Foundation
CAR	Central African Republic
CARPE	Central African Regional Programme for the Environment
CGI	Clinton Global Initiative
CITES	Convention on International Trade in Endangered Species
CMS	Convention on Migratory Species
CODIS	Combined DNA Index System
CoP	Conference of the Parties
DG DEVCO	EC Directorate General for Development and Cooperation
DRC	Democratic Republic of Congo
DNA	Deoxyribonucleic acid
FBI	Federal Bureau of Investigation
EC	European Commission
ECF	Elephant Crisis Fund
EDF	European Development Fund
ETIS	Elephant Trade Information System
EU	European Union
EUR	Euro
GEF	Global Environment Facility
HEC	Human Elephant Conflict
HWC	Human Wildlife Conflict
ICCWC	International Consortium on Combating Wildlife Crime
IFAW	International Fund for Animal Welfare
IGO	Inter-governmental Organisation
IUCN	International Union for the Conservation of Nature
KLC	Key Landscape for Conservation
KWS	Kenya Wildlife Service
LRA	Lord's Resistance Army
MIKE	Monitoring the Illegal Killing of Elephants
MIKES	Minimising the Illegal Killing of Elephants and other Endangered Species
NGO	Non-governmental Organization
NIP	National Indicative Programme
PA	Protected Area
PAEAS	Pan African Elephant Aerial Survey
PIKE	Proportion of Illegally Killed Elephants
RhODIS	Rhino DNA Identification System

RIP	Regional Indicative Programme
SAR	Special Administrative Region
SC	Steering Committee
SPANEST	Strengthening the PA Network in Southern Tanzania
SSC	Species Survival Commission of IUCN
STE	Save The Elephants
ToR	Terms of Reference
TRAFFIC	The wildlife trade monitoring network
UK	United Kingdom
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNODC	United Nations Office on Drugs and Crime
US(A)	United States (of America)
USAID	US Agency for International Development
USFWS	US Fish and Wildlife Service
VGL	Veterinary Genetics Laboratory
WAPOK	"W"-Arly-Pendjari-Oti Mandori-Kéran
WCN	Wildlife Conservation Network
WCS	Wildlife Conservation Society
WEN	Wildlife Enforcement Network
WWF	Worldwide Fund for Nature

Of all Africa's iconic "flagship" species, few if any have greater relevance to the conservation of the continent's overall wildlife and wilderness than the elephant. Its importance, whether viewed from an economic perspective (both positive and negative) or an ecological one (as a habitat engineer), is so well documented as to be beyond dispute. Not surprisingly therefore – with almost 100 elephants being lost daily - the current onslaught on the species for its ivory is a cause for great international concern, and a key catalyst for the present study of African conservation needs and strategies on behalf of the European Commission (EC).

1.1 STATUS: DISTRIBUTION AND NUMBERS

The African Elephant (*Loxondonta africana*) is still widespread, being found in 35-38 Range States[1] in all four regions as shown in Table 1 and the Map that follows. The numbers data given are for 2012/3 as posted on the website http://elephantdatabase.org, from which full details at country and individual population levels may be obtained. Forest populations are very likely to be under-estimated due to obvious counting difficulties. Conversely, many savannah populations have suffered heavy poaching losses since (see 1.2.1 below), but an up-to-date continental dataset is not yet available.

Table 1. African Elephant numbers: continental and regional totals (2012/3)

Region	Definite	Probable	Possible	Speculative	Range Area (km²)	% of Continental Range	% of Range Assessed
Central Africa[2]	16,486	65,104	26,310	45,738	1,005,234	30	55
Eastern Africa[3]	130,859	12,966	16,700	7,566	873,318	26	57
Southern Africa[4]	267,966	22,442	22,691	49,317	1,312,302	39	47
West Africa[5]	7,107	942	931	3,019	175,552	5	65
Totals	**433,999**	**89,873**	**54,629**	**105,640**	**3,366,405**	**100**	**53**

The distribution of elephants varies considerably across the four regions, with small fragmented populations in West Africa, and large tracts of range remaining in Southern Africa. Holding just over 52% of the continent's DEFINITE plus PROBABLE elephants, Southern Africa has by far the largest known number of elephants in any region. Eastern Africa holds just over 28%, Central Africa 17% and West Africa 1.6%.

In Southern Africa, Botswana holds by far the largest population in that region and on the continent. Mozambique, Namibia, South Africa, Zambia and Zimbabwe hold large elephant populations. Data are scanty in Angola and smaller populations persist in Swaziland and Malawi. While numbers seem to be increasing in Namibia and South Africa, there appear to be declines in some of the populations in Zimbabwe and Zambia. The vast majority of Eastern Africa's known elephants are in just two countries, Tanzania and Kenya[6].

[1] The continued presence of elephants in Senegal, Somalia, and Sudan (north) remains uncertain
[2] Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon
[3] Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Tanzania, Uganda
[4] Angola, Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia, Zimbabwe
[5] Benin, Burkina Faso, Cote d'Ivoire, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo
[6] For more detail, see section 5.2.1 of Volume 3 for Eastern Africa

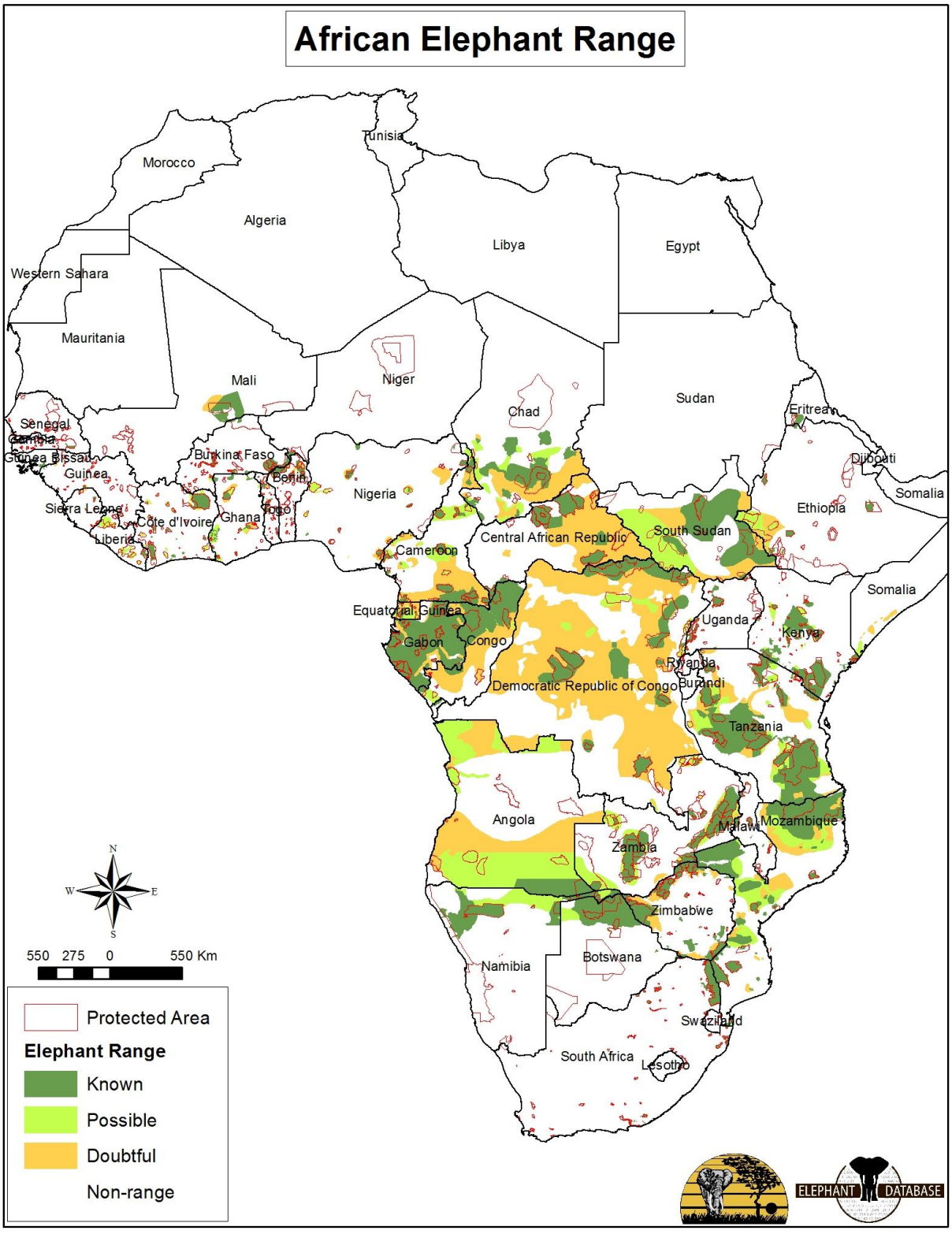

Figure 1. African elephant range

Currently two morphologically different sub-species of African Elephant are recognised, namely the Bush or Savannah Elephant (*L.a. africana*) typical of Eastern and Southern Africa, and the Forest Elephant (*L.a. cyclotis*) found in parts of Central and West Africa. However, recent genetic studies suggest there may be two (possibly three) distinct species. Pending further work and analysis, IUCN and its African Elephant Specialist Group (AfESG) continue to recognise two sub-species. The derivation of separate conservation strategies for the distinct forms is complicated by the hybridisation evident in some interface areas, notably in Central Africa.

Overall, the species is currently listed as Vulnerable on the IUCN Red List, but with an increasing number of populations being reduced to critically low numbers as a result of the range of threats described below. All populations of African elephant have been listed on CITES Appendix I since 1989, except for four national populations that were transferred back to Appendix II (Botswana, Namibia and Zimbabwe in 1997, and South Africa in 2000).

1.2 THREATS AND TRENDS

Land use pressure, range and habitat loss, human elephant conflict, and illegal killing for both meat and ivory all pose threats to the long-term survival of elephant populations across Africa. Recent research also points to climate change and the increasing frequency of droughts as a major threat to elephant populations in the Sudano-Sahelian ecoregion.

At this point in time however, by far the most acute threat facing African elephants arises from large scale poaching and the illegal ivory trade as confirmed by data derived from two key CITES monitoring programmes namely, Monitoring the Illegal Killing of Elephants (MIKE) and Elephant Trade Information System (ETIS). The fact that the MIKE and ETIS data are consistent with each other gives confidence that each set of results and their interpretation is robust.

The information provided throughout this section is sourced primarily from the Status Report jointly prepared for the 65th Meeting of the CITES Standing Committee 7-11 July 2014 by the AfESG, MIKE and ETIS on behalf of the CITES Secretariat[7].

1.2.1 Illegal killing

The MIKE programme is managed by the CITES Secretariat under the supervision of the CITES Standing Committee and implemented in collaboration with IUCN. Since implementation began in 2001, MIKE has benefitted from the generous financial support of the **European Union**. MIKE aims to inform and improve decision-making on elephants by measuring trends in levels of illegal killing of elephants, identifying factors associated with those trends, and by building capacity for elephant management in range States. To date MIKE operates in a large sample of sites spread across elephant range in 30 countries in Africa and 13 countries in Asia. There are some 60 designated MIKE sites in Africa, which include many of the continent's prime National Parks—such as Chobe, Etosha, Kruger, Ruaha, South Luangwa and Tsavo—as well as some of its most famous Game Reserves, such as Selous and Niassa. Taken together, the elephant population at MIKE sites is estimated to represent 30 to 40% of the continental elephant population.

[7] CITES, AfESG, TRAFFIC (2013) Status of African elephant populations and levels of illegal killing and the illegal trade in ivory: a report to the CITES Standing Committee http://cites.org/sites/default/files/eng/com/sc/65/E-SC65-42-01_2.pdf

MIKE data are collected by law enforcement patrols and other means in designated MIKE sites. When an elephant carcass is found, site personnel try to establish the cause of death and other details. This information is recorded in standardized carcass forms, details of which are then submitted to the MIKE programme. A database of more than 13,000 carcass records has been assembled so far, providing a substantial information base for statistical analysis.

MIKE evaluates relative poaching levels based on the Proportion of Illegally Killed Elephants (PIKE), which is calculated as the number of illegally killed elephants found divided by the total number of elephant carcasses encountered by patrols or other means, aggregated by year for each site. Coupled with estimates of population size and natural mortality rates, PIKE can be used to estimate numbers of elephants killed and absolute poaching rates.

The data show a steady increase in levels of illegal killing of elephants starting in 2006, with 2011 displaying the highest levels of poaching since MIKE records began in 2002. In 2012 and the first six months of 2013, the trend seems to flatten out at levels close to those recorded in 2011. PIKE levels seem to have begun a gradual decline thereafter, reaching in 2013 similar levels to those recorded in 2010.

Despite the decline since 2011, poaching levels overall remain alarmingly high, with nearly two thirds of dead elephants found in 2013 deemed to have been illegally killed. Overall, the elephant population at MIKE sites is likely to have continued to decline in 2013, as poaching rates exceed likely intrinsic population growth rates. In some areas, a decline in PIKE may be the result of a substantial decline in the elephant population, making it more difficult for poachers to find suitable targets in such areas. However, without recent and reliable elephant population estimates from such areas, it is difficult to verify the impact of poaching on such populations

Differences in poaching levels between the different African regions are evident, with Central Africa consistently showing the highest overall poaching levels (see also Volume 4, section 2.1.2), in contrast with Southern Africa (see also Volume 2, section 3.2.1), which has shown the lowest overall levels. In Eastern Africa, which has contributed the largest number of carcass records, the trend is very similar to the continental one. Counts of Tanzania's biggest elephant populations carried out in October/November 2013 show alarming declines since the previous counts in 2009. In this period the Mikumi-Selous population (numbering around 109,000 in 1976), fell from an estimated 38,975 to 13,083 (66%), while the Ruaha-Rungwa population fell from an estimated 31,625 to 20,090 (36.5%)[8]. West Africa has the smallest elephant population and has submitted the smallest number of records (see also Volume 5, section 6.1.1). As a result, there is a high level of uncertainty around PIKE estimates in that region, which makes it difficult to determine the trend. Nevertheless, overall higher PIKE levels are apparent in all four African regions in the second half of the period covered by MIKE monitoring (2008-2013). While PIKE levels in 2013 were lower than in 2011 in all four regions, they remain above the 0.5 level in all but Southern Africa[9].

Modelled PIKE levels for 2012 translate to an estimated 15,000 elephants illegally killed across all African MIKE sites in that year alone, or about 7.4% of the total elephant population in those sites. As elephant populations seldom grow at more than 5% *per annum* the model suggests that at this level of offtake, the overall population in MIKE sites is likely to have declined by around 2% in 2012. Furthermore, the model estimates that the threshold of sustainability was crossed in 2010, with poaching rates on top of natural mortality remaining above the

[8] Carcass ratios were roughly 33% and 15% respectively, compared with the 7 to 8% associated with natural mortality
[9] PIKE levels above 0.5 indicate that illegal annual off-take is likely to be higher than the number of elephants born annually into a naturally increasing population. In other words, a PIKE level of 0.5 or higher means that the elephant population in question is very likely to be in net decline.

population growth rate ever since. It is therefore likely that populations at MIKE sites have been in net decline since 2010. This does not mean declines at every site, merely a decline on average with some taking larger losses perhaps and some smaller. However, most observers believe this average decline, extrapolated from a 30-40% sample, almost certainly reflects a continent-wide trend for the species as a whole.

One authoritative study published recently has concluded that over 100,000 African elephants were killed in the three years 2010, 2011 and 2012, at an average of 33,630 per year[10].

According to the AfESG it is not yet possible to derive a robust estimate for the scale of elephant poaching in 2013. However, an indication can be derived from the above estimate of elephants killed at MIKE sites in 2012 (around 15,000) in combination with the estimated change in PIKE between 2012 and 2013 (a decline of 5.86% across African MIKE sites). This preliminary and rough calculation results in an estimate of more than 14,000 elephants killed at MIKE sites alone in 2013. The AfESG has stated that there are good reasons to believe that the number of elephants illegally killed throughout Africa in 2013 ran, as in previous years, into the tens of thousands, perhaps in the order of 20 to 22 thousand. Also in line with previous evidence however, is the likelihood that MIKE-derived data return underestimates of mortality at an overall continental level[11].

1.2.2 Illegal trade

According to ETIS, the frequency of large-scale ivory seizures, in which 500 kg or more of ivory is seized through a single law enforcement intervention, has increased greatly since 2000. Prior to 2009, an average of five and never more than seven such events occurred each year but thereafter an average of 15 and as many as 21 large-scale ivory seizures have taken place each year. In the period from 2009 through 2013, at least 77 large-scale ivory seizures occurred. Although data for 2013 may still be incomplete, 19 large seizures have been reported to ETIS for the year, yielding a greater quantity of ivory than any other previous year going back to 1989[12].

Whether this constitutes an increase in actual illegal trade volumes or reflects improved law enforcement in particular countries remains to be determined. It is known however, that the upward surge in terms of the weight of ivory seized from 2009 through 2011 does represent increased illegal activity that is being driven by consignments in the large-scale weight class. Further, such seizures are indicative of the presence of organised crime in the illicit ivory trade, which often involves Asian-run, Africa-based sourcing of ivory. According to TRAFFIC, the raw data on large-scale ivory seizures represent the salient evidence of ivory trade crime orchestrated by transnational criminal operatives. Because large-scale seizures of ivory typically generate media coverage and become known soon after they occur, tracking them serves as a crude early indicator of the illicit ivory trade as a whole. For this reason, the 2013 data are regarded with considerable alarm as they suggest that the illegal trade in ivory is continuing to increase.

ETIS large-scale seizure data have allowed an analysis of the routes followed by illegal ivory when in transit between supply countries in Africa and consumer countries (mostly) in Asia, and show how these keep changing in order to elude detection. However, determining the provenance of seized ivory remains a major constraint to dismantling the illicit networks involved in the trade (see also 1.4.5 below).

[10] Wittemyer G., Northrup J., Blanc J., Douglas-Hamilton I., Omondi P. and Burnham K. (2014) Illegal killing for ivory drives global decline in African elephants. *Proceedings of the National Academy of Sciences of the United States of America* 111 (36): 13117–13121
[11] See also http://newswatch.nationalgeographic.com/2013/12/16/elephant-declines-a-view-from-the-field/
[12] ETIS seizure data provided by TRAFFIC up to date as of 10 March 2014

1.2.3 Factors associated with poaching and the ivory trade

The MIKE programme has statistically evaluated relationships between PIKE levels and a wide range of ecological, biophysical and socio-economic factors at the site, national and global levels. Three such factors consistently emerge as very strong predictors of poaching levels and trends: poverty at the site level, governance at the national level and demand for illegal ivory at the global level.

Previous MIKE analyses have used human infant mortality rates in and around MIKE sites as a proxy for poverty. Infant mortality emerged in successive MIKE analyses as the single strongest site-level correlate of PIKE, with sites suffering from higher levels of poverty experiencing higher levels of elephant poaching. A new poverty-related variable, namely the proportion of people living in extreme poverty (defined as people living with less than US$ 1.25 per day) in and around MIKE sites was tested in the most recent analysis. This variable was found to be as strong a predictor of PIKE at the site level as the infant mortality rate, with higher poaching levels found in and around sites where poverty is more prevalent. While these relationships highlight a close linkage between the well being of people and that of the elephant populations with which they coexist, they do not imply that wildlife conservation areas - or indeed poaching therein - cause poverty. Rather, these relationships simply suggest that poaching is more likely to be adopted as an economic activity in areas where human livelihoods are insecure.

At the national level, the strongest correlate of PIKE is governance, as measured by Transparency International's Corruption Perceptions Index (CPI) or the World Bank's Worldwide Governance Indicators. High poaching levels are more prevalent in countries where governance is weaker, and vice versa. This is likely to be a causal relationship, with poor governance facilitating the illegal killing of elephants and movement of illegal ivory, be it through ineffective law enforcement or active aiding and abetting by unscrupulous officials.

Ultimately however, the illegal killing of elephants for ivory is driven and sustained by demand from consumers who are willing to pay for illegal ivory. ETIS analyses indicate that, in recent years, China has become the world's largest consumer of illegal ivory. This is corroborated by the fact that that temporal PIKE trends are strongly related to patterns in consumer spending in that country. This relationship does not hold for other traditional destination markets for ivory (Europe, USA or Japan) or for countries known to be important transit points in the ivory trade chain (Malaysia, Philippines, Thailand or Viet Nam).

However, as household consumption expenditure is a measure of general consumer demand for goods and services, and not a specific measure of demand for ivory, a more specific proxy measure was sought with a view to replacing it in MIKE analyses. To that end, it was recently hypothesized that demand for mammoth ivory—the international trade in which is legal and reliable data on which is therefore more easily obtainable—would serve as a better predictor and a better proxy for elephant ivory demand, not least because China and Hong Kong SAR account for virtually all global imports.

When tested against models developed in previous analyses, the time series of mammoth ivory import values per kg for China (including Hong Kong SAR) was indeed found to be a better predictor of PIKE than the Chinese household consumption expenditure variable used in the past. In other words, mammoth ivory import prices do appear to be a better proxy for demand for ivory than household consumption expenditure. It is important to note that no claim has been made that mammoth ivory imports cause elephant poaching. It is rather more plausible that high demand for ivory results in both high raw mammoth ivory prices and high levels of poaching in Africa.

Temporal PIKE trends are also correlated with another demand-related variable, namely trends in large-scale ivory seizures as reported by ETIS. The three main factors identified by MIKE analyses - poverty, governance and demand - explain nearly two thirds of the variation observed in PIKE levels across African sites. Poverty and governance explain spatial patterns in poaching levels, while demand accounts for the temporal trend.

As things stand, the four Range States with elephant populations currently on Appendix II of CITES may not apply to sell ivory until after 2017 at the earliest, and so any such proposal could not be considered until CoP 18 (in 2019) at the earliest. States with elephants on Appendix I may not apply to sell ivory. The earliest any Appendix 1 state may apply to downlist its elephant populations to Appendix II would be at the next CoP17 in South Africa (in 2016). No seized illegal ivory may ever be sold.

However, it must be noted here that there is a considerable divergence of opinion amongst professional conservationists as to whether or not totally banning the trade in ivory is in the elephants' best interests. This often heated debate has been raging since the CITES ban of 1989, and continues to this day. The related literature is extensive. Amongst the latest pro-trade inputs are arguments based on claims that the massive increase in ivory poaching in Africa is not being driven by rising demand for carved ivory in China, but by speculative stockpiling of ivory in China, and that the current policies stamping down on the illegal ivory trade are actually fuelling the main driving force behind poaching, creating a counter-productive positive feedback loop[13]. On the anti-trade side, recent inputs based on advanced economic analyses of market and trader behaviour indicate that a properly controlled and supervised legal trade as a mechanism for balancing supply and demand can never be attained in a corrupt world[14,15,16] (see also 2.4.6).

The simple conclusion to be drawn from this intractable debate is that probably there never will be any single or perfect solution to the ivory trading dilemma, which just underlines the importance of improving *in situ* protection, while at the same time working to stop or at least minimise demand from the ultimate consumer. When it comes to trade issues, the EU should maintain a policy of following and supporting decisions of CITES' full Conference of the Parties. This recommendation is made in the belief that the CoP will not make decisions that are not based on an adequate consensus of scientifically informed opinion. In the meantime, suitable measures to support the ongoing fight against the illicit trade in ivory are considered in 1.4.4.2 below.

1.3 CONSERVATION PLANNING AND COORDINATION

In 2010, the continental African Elephant Action Plan (AEAP) was adopted by a consensus of all the African elephant range States. The AEAP defines a set of eight key objectives aimed at securing, and restoring where possible, sustainable elephant populations throughout their present and potential range in Africa. At the next level, regional action plans are in place in Central, Southern, and West Africa. National action plans and strategies also have been adopted by 15 countries in the last ten years. A list of existing strategies is given in Table 2.

[13] See the opinion piece by D. Stiles entitled *Can Elephants Survive a Continued Ivory Trade Ban?* Published 15 September 2014 on the National Geographic website and available here http://newswatch.nationalgeographic.com/2014/09/15/opinion-can-elephants-survive-a-continued-ivory-trade-ban/ and B. Moyle (November 2014) The raw and the carved: Shipping costs and ivory smuggling, in *Ecological Economics* 107: 259-265 and available here http://authors.elsevier.com/a/1Piyg3Hb~026CT

[14] See the June 2014 paper by Nadal and Aguayo entitled *Leonardo's Sailors: a review of the economic analysis of wildlife trade* available here http://thestudyofvalue.org/wp-content/uploads/2014/06/WP5-Nadal-and-Aguayo-Leonardos-Sailors-2014.pdf

[15] E. Bennett's essay in the journal Conservation Biology entitled *Legal Ivory Trade in a Corrupt World and its Impact on African Elephant Populations* first published online in August 2014 at http://onlinelibrary.wiley.com/doi/10.1111/cobi.12377/abstract

[16] http://voices.nationalgeographic.com/2014/10/22/legalizing-ivory-trade-taking-to-new-heights-a-dangerous-policy-proposal/

Table 2. List of African Elephant Action Plans

African Elephant Action Plan (2010)			
Central Africa	**East Africa**	**Southern Africa**	**West Africa**
- Strategy for the Conservation of Elephants in Central Africa (2005) - Cameroon (2010)	- Kenya (2012) - Tanzania (2012)	- Southern Africa Regional Elephant Conservation and Management Strategy (2005) - Botswana (2003) - Mozambique (2010) - Namibia (2007) - Zambia (2003)	- Strategy for the Conservation of West African Elephants (2005) - Convention on Migratory Species - West African Elephant Memorandum of Understanding (2005) - Benin (2005) - Burkina Faso (2003) - Cote d'Ivoire (2004) - Ghana (2000) - Guinea (2008) Guinea-Bissau (2000) - Niger (2010) - Togo (2005)

Other more recent plans not listed include, at a continental level, the 14 Urgent Measures formulated and adopted by the recent high-level African Elephant Summit whose purpose is described in Box 1, while the Measures themselves are reproduced in Annex 1.

Box 1. African Elephant Summit (December 2013)

The African Elephant Summit (AES) took place in Gaborone from 2-4 December 2013. It was co-hosted by the Republic of Botswana and the International Union for Conservation of Nature (IUCN) to address a conviction that, given the magnitude of the problem, and the fact that illegal trade is increasingly entrenched in organized crime networks, the African elephant crisis required political commitments at the highest level of government to secure viable elephant populations across the continent and to halt the illegal ivory trade at all points along its value chain. Thus the AES brought together senior representatives of African elephant range States, ivory transit States, and the States that are the major consumers of ivory to secure their commitment to take urgent measures designed to remove barriers to effective elephant protection and significantly reduce the amounts of illegal ivory in trade. The Summit duly debated, endorsed and adopted a set of 14 well-defined Urgent Measures required over a 12 month period from both supply and consumer states.

Building on both the AEAP and the AES, Gabon is promoting the *Elephant Protection Initiative*, an agreement to be signed between itself, Botswana, Chad, Ethiopia and Tanzania regarding the "federation" of national parks and wildlife agencies in order to exchange lessons learned and technical experience aimed at promoting south-south cooperation and finding African solutions to the elephant crisis.

At a national level, the 8 countries most implicated in the illicit ivory trade were required by CITES at its March 2013 CoP16 in Bangkok to prepare special National Ivory Action Plans and take urgent measures to implement them in order to demonstrate their commitment to the Convention[17]. These 8 Plans have been prepared and submitted, and their implementation will be subject to periodic review at meetings of the CITES Ivory Enforcement Task Force. The CITES Secretariat is now also seeking similar plans from countries of 'secondary concern' (Cameroon, the Congo, the Democratic Republic of the Congo, Egypt, Ethiopia, Gabon, Mozambique and

[17] China (including the Special Administrative Region of Hong Kong), Kenya, Malaysia, Philippines, Tanzania, Thailand, Uganda and Viet Nam

Nigeria) as well as from others identified as being of 'importance to watch' (Angola, Cambodia, Japan, the Lao People's Democratic Republic, Qatar and the United Arab Emirates)[18].

A number of bodies exist which provide oversight and coordination to the other more regular Plans listed in Table 2. Chief amongst these is IUCN SSC's African Elephant Specialist Group (AfESG)[19] which maintains the African Elephant Database (AED) and periodically publishes African Elephant Status Reports (AESR) and various guidelines for many aspects of elephant management. Most elephant range states are Party to CITES, and with all populations listed on either Appendix I or II, the Convention provides the single most powerful instrument available to influence action to protect and manage elephant populations on the one hand, and investigate and control the ivory trade on the other. CITES decisions on these matters are guided primarily on information collated and interpreted by AfESG in close collaboration with the MIKE and ETIS programmes[20]: these three bodies being mandated to report to the CITES Standing Committee on all elephant-related decisions and resolutions of the Parties (see 1.2 above).

The AEAP is overseen by a Steering Committee (see also 1.4.2), while the national agency responsible for wildlife management is generally responsible for the implementation of national level plans.

1.4 ACTION BEING TAKEN

The recent escalation in elephant poaching and the widespread publicity it has received has stimulated a huge response from IGOs, governments and NGOs (see extensive list in section 3.3.4 of the Trade chapter also in this Volume).

One interesting revelation of this was the finding at the recent African Elephant Summit that action is already being taken by numerous organisations of different types with respect to ALL the 14 Urgent Measures adopted by the delegates.

In addition to the "shock-value" of the publicity given to the carnage, another very important factor underlying the overall response is the links that have been made to national security in sensitive parts of the continent and the growth of organised crime activity in Africa. Thanks to escalating demand, a kilo of ivory can sell for $3,000 to collectors in China or America. With such high value, ivory is widely believed to have become a commodity that rebel militias such as the Lord's Resistance Army (LRA), which originated in Uganda, or al-Shabaab in Somalia use to finance their operations, at least opportunistically. Having received enough credible information as to links between poaching and LRA activities in the DRC, the UN Security Council adopted In January 2014 a Resolution (No 2136) which makes specific reference to illegal wildlife trafficking, especially of elephant ivory, and authorises sanctions such as arms embargos, travel bans and asset freezes on groups and individuals that are complicit in illegal wildlife trade[21].

Together with negative impacts on the tourism sector, the apparent links to organised crime as well as national and regional insecurity have helped motivate both national governments and international organisations to take action. As summarised below, the character of the overall response varies: some of it is general, while some is focused on a specific issue or site.

[18] http://www.cites.org/eng/dec/valid16/16_78-83.php
[19] The AfESG is one of the many Specialist Groups that make up IUCN's Species Survival Commission, or SSC
[20] The ETIS programme is managed by TRAFFIC on behalf of the CITES Parties
[21] A similar conclusion was reached and Resolution adopted (No 2134) for the CAR also.

1.4.1 Awareness raising

Awareness of the elephant poaching and ivory trade crisis has been raised through a variety of means including publications, meetings, campaigns and other initiatives. A few notable examples are:

- *Elephants in The Dust: The African Elephant Crisis*, a joint report from UNEP, CITES, IUCN, and TRAFFIC, published in English and French, and launched in March 2013 at the CITES CoP16 in Bangkok

- Vira, V., and T. Ewing (2014) *Ivory's Curse: The Militarization and Professionalization of Poaching in Africa.* Born Free USA and C4ADS

- Vira, V., and T. Ewing and J. Miller (2014) *Out of Africa: Mapping the global trade in illicit elephant ivory*. Born Free USA and C4ADS

- The African Elephant Summit described above can be thought of as a high-level awareness exercise directed at the Governments of both ivory supply and consumer States. Of course its main focus was on solutions, not only awareness (see Box 1)

- The world's leading conservation NGOs have all responded to the poaching crisis with their own awareness and fund-raising campaigns to support specific elephant and ivory-oriented programmes and projects addressing both ends of the supply chain, as well as the routes in between. WCS's *96 Elephants* campaign is just one example. Some approaches are innovative: WildAid has pioneered the use of celebrities to modify public opinion in China, while Space for Giants has run a combined publicity and fund-raising campaign through The Independent, a leading UK daily newspaper. *Hands Off Our Elephants* is a notable example from Kenya of a national level campaign in a "source country" led by an indigenous NGO, in this case an organisation called WildLife Direct. The campaign has published strong-impact advertisements, and has benefited from the direct involvement and support of the country's First Lady: it has also signed a mutually supportive MoU with UNEP. NGO awareness campaigns in "consumer countries" are mentioned under the section below headed "Stop the Demand"

- Destroying ivory stockpiles. An increasing number of countries have burnt or crushed their stockpiles recently (e.g. Belgium, Chad, China, France, Gabon, Hong Kong SAR, Philippines and the USA in the period 2012-2014).

1.4.2 Funds dedicated to Elephant Conservation

- *The African Elephant Fund*. An African Elephant Fund (AEF) jointly administered by a Steering Committee (AEFSC) and UNEP has been put in place to help fund the implementation of the AEAP, for which UNEP charges a modest cost-recovery overhead. Governance is vested in the Range States who elect the AEFSC, which in turn follows well designed grant making procedures based on sound eligibility criteria. To date there have been only two funding rounds resulting in a number of small grants. One reason for this is that meetings of the AEFSC cannot be financed by the Fund, so it meets seldom and opportunistically. Donors have included the USA and South Africa as well as the following EU Member States: France, Germany, Netherlands and the UK, with Germany and the Netherlands both announcing

further contributions at the recent African Elephant Summit[22]. To date all donations have been relatively small in relation to the AEAP's overall budget of $97 million. So far grants totalling just over $367,000 have been disbursed to 12 projects in Eastern (49%), Southern (17%) and West Africa (34%). Few if any applications have been received from Central Africa and none approved. According to a report received from UNEP as administrator of the Fund, there is approximately US$ 567,000 available for projects. Consequently a third call for proposals is anticipated before the end of 2014.

- *The Elephant Crisis Fund*. Save the Elephants (STE) and the Wildlife Conservation Network (WCN) have created and jointly administer the Elephant Crisis Fund (ECF) which aims to address the current ivory crisis and complement other efforts by the growing coalition of concerned organizations. The ECF intends to provide at least $10 million to partners around the globe that are undertaking actionable projects focused on anti-poaching, anti-trafficking, and demand reduction over the next 5 years. The Elephant Crisis Fund was launched in 2013 and has already been able to make a difference for elephants. As of September 2014, the ECF had disbursed over $2.8 million, supporting 15 anti-poaching projects, 8 anti-trafficking projects and 9 demand-reduction projects across Africa and East Asia.

- *CGI Partnership to Save Africa's Elephants*. In 2013, the Clinton Global Initiative (CGI) brokered a formal Partnership with the Wildlife Conservation Society, African Wildlife Foundation, World Wildlife Fund, International Fund for Animal Welfare, Conservation International and a number of other organisations[23] committed to preventing further elephant poaching by directly targeting the chief drivers of poaching. This commitment takes a triple pronged approach by dedicating funding to: "stop the killing," "stop the trafficking," and "stop the demand." A total of $80m[24] will be used to hire and train park rangers at 52 MIKE sites encompassing a large proportion of the entire elephant population in Africa; to fund sniffer-dog teams along the top smuggling routes; and to train law-enforcement officials and judges responsible for prosecuting international trafficking gangs. The CGI is looking to raise an additional $70m for the anti-poaching plan over the next three years. Following the strong success of the first year's single commitment, the CGI announced at its Annual Meeting on 23 September 2014 a scaling up of the Partnership into the *Elephant Action Network*, which now includes 21 different commitments made by 16 individual organizations, which reach 58 different countries and touch upon each of the same three key pillars: Stop the Killing, Stop the Trafficking, Stop the Demand. The Network now has formal links with the Gabon-led Elephant Protection Initiative (see 1.3 above).

- *African Elephant Conservation Fund.* As part of its Wildlife Without Borders programme, the US Fish and Wildlife Service administers the AECF. In 2012, USFWS awarded 20 new grants for African elephant conservation, totalling $1,397,916 which raised an additional $1,606,004 in leveraged funds. Field projects in 13 countries were supported. Over $30m were allocated in the years 2007 through 2012.

- *Species Protection Grant Fund.* This is a relatively new trust fund being raised and administered by the African Wildlife Foundation to protect a range of "flagship" species including the African elephant for which an associated action plan has been developed using an in-house methodology that identified 10 key populations qualifying for priority support[25]

[22] Netherlands EUR 130,000; Germany EUR 50,000
[23] African Parks Network, Association of Zoos and Aquariums, Frankfurt Zoological Society, Freeland Foundation, International Conservation Caucus Foundation, National Geographic, Save the Elephants, TRAFFIC, WildAid, WildLife Direct, Howard Buffett Foundation
[24] This is not new money: it was already raised and committed before CGI was formed
[25] Four populations/sites in southern Africa as follows – Botswana in Kazungula landscape, Zimbabwe in Kazungula landscape, Zambezi landscape, and Luangwa landscape. Three populations/sites in eastern Africa as follows – Tsavo ecosystem, Ruaha and Selous. Two

- *MIKES Emergency Response Mechanism*. The upcoming MIKES programme (see below), includes a small (c. $0.5m) but important provision for flexible emergency action.

- Following adoption of the Paris Declaration in December 2013 (see 3.3.2) the *French Government* donated EUR 10 million to Gabon to support the fight against poaching. This reflects France's commitment to fight wildlife crime and was publicised as "an invitation to other countries and international institutions to follow suit to save Africa's last elephants".

1.4.3 Monitoring

1.4.3.1 MIKE, MIKES and ETIS

The CITES Monitoring the Illegal Killing of Elephants (MIKE) Programme referred to many times in this report is currently being funded by the EC through an interim, EUR 2.0m project (MIKE 3.0) which runs until December 2014.

Thereafter, the MIKE Programme will be financed by a new project called the *Minimising the Illegal Killing of Elephants and other Endangered Species* (MIKES) Project. MIKES will be implemented by CITES in collaboration with participating range States and other partners over a 4.5 year period commencing in late 2014, with a budget of EUR 12.3m being supported in full by the European Development Fund (EDF).

The MIKES Project will build on the successes that have been achieved by the MIKE Programme over the past decade, but with an expanded focus to include: a) other CITES-listed flagship species threatened by international trade such as rhinos and great apes; b) initiatives aimed at minimising the impact of poaching and the illegal trade on the target species, in particular through efforts to strengthen the capacity and capabilities of law enforcement agencies to combat poaching at both site and national levels[26]; and c) piloting of the MIKE Programme's successful adaptive management and monitoring approaches in selected Caribbean and Pacific sites.

In Africa, support will continue to be provided for monitoring illegal killing of elephants in the existing 56 MIKE sites, with additional support for strengthening law enforcement capacity focussed on a sub-set of eight yet-to-be-selected sites, while additional sites may be enlisted to the programme through complementary activities by partners[27]. Importantly, under MIKES, collaboration and integration with ETIS will be greatly strengthened, with MIKES providing significant support for ETIS activities.

1.4.3.2 Population surveys

In order to maintain and update the African Elephant Database, the AfESG collates all available survey data and works to standardise and improve the precision of the aerial and ground count methodologies used. Survey costs are invariably high, and seldom financed by Governments without external assistance. Thus securing funding for surveys is a perennial challenge, and so the recent announcement of a $7m grant from the Paul G. Allen Foundation to the Botswana-based NGO Elephants Without Borders to implement a series of aerial surveys across the elephant's range in partnership with Governments and a number of other competent NGOs is a very important contribution to the overall monitoring effort. Known as the Pan African Elephant Aerial Survey (PAEAS),

sites/populations in central Africa including Dja-Odzala-Minkebe (in Cameroon, Congo, Gabon respectively), and Sangha Trinational (Cameroon, CAR and Congo). One population/site in western Africa – Park W landscape

[26] Including through the Law Enforcement Capacity Assessments discussed in section 3.6.2

[27] As mentioned elsewhere WCS intends, through the CGI Partnership, to support MIKES objectives and monitoring protocols in 50 complementary sites many of which are MIKE sites already

this exercise will cover savannah populations throughout much of eastern and southern Africa, as well as some savannah areas in central and west Africa[28].

Surveying in forest represents a much greater challenge because of difficult access, limited visibility, more complicated data collection and analysis methodologies, and a relative lack of competent expertise in them. All this makes it difficult to raise the money needed, but some surveys have been ongoing for years, partly funded by the EU, partly by USAID (CARPE) and partly by USFWS, although funding overall has been insufficient to carry out regular surveys at more than about a 7 year cycle, or worse, at many sites.

Consequently additional funds are urgently required to support an ongoing and more frequent forest survey cycle, especially as the upcoming MIKES programme has no provision for the necessary ground surveys (nor aerial either, for that matter). At the time of writing in November 2014, there were indications that the Paul G. Allen Foundation might fund ground as well as aerial surveys which would be extremely welcome and valuable, as without information on live numbers, interpretation of the monitoring data for forest populations will be index-based only.

1.4.4 Law enforcement

As demonstrated by the Elephant Crisis Fund and the CGI Partnership outlined above, most programmes and projects aim to support realisation of one or more of the three key strategic Objectives recognised by all organisations working to conserve elephants, and which address the full ivory value chain, namely Stopping the Killing, Stopping the Trafficking and Stopping the Demand.

While some elements of each of these overarching strategic objectives as concern elephants are discussed here, a much fuller discussion of their application to the illicit trade and trafficking of wildlife products in general (not just ivory), and from which elephants will benefit, is given in sections 3.6, 3.7 and 3.8 of this Volume.

Government action in these areas generally conforms with the priorities identified in their respective Elephant and/or Ivory Action Plans (where these exist).

1.4.4.1 Stopping the Killing

The focus here is on protecting elephants in the field, whether inside or outside protected areas (PAs). Government responses have included strengthening existing anti-poaching forces (often PA-based), as well as forming, training, equipping and deploying specialised Units or Strike Forces that are highly mobile and so able to move into a "hot-spot" to reinforce local operations at very short notice (e.g. Kenya, Uganda). Where it is felt anti-poaching operations are needed on a very large scale, some Governments have assigned units of their standing Defence Forces to assist (e.g. Botswana, Tanzania). Such operations can backfire badly if poorly managed. Tanzania's recent *Operation Tokomeza Ujangili* had to be suspended when enforcement personnel allegedly violated citizens' rights by abusing their powers of search, interrogation, confiscation and arrest, leading to the dismissal of four Ministers[29]. In terms of seizures and justifiable arrests however, the resumed exercise is being deemed a success.

[28] More information at https://greatelephantcensus.com
[29] Natural Resources and Tourism; Livestock and Fisheries; Home Affairs; Defence and National Service

Several countries are instituting proactive and reactive intelligence procedures as part of a multi-agency approach to the problem. Other Government actions being taken to help stop the killing involve promulgation of truly deterrent punishments for persons caught poaching elephants (and other wildlife). In most cases this requires re-enactment of relevant policies and laws, such as those passed by Kenya in December 2013 under which poachers now face life imprisonment, and a fine of 20 million Kenya shillings[30], although concerns remain as to possible loopholes (see Volume 3 for Eastern Africa, section 3.2.1). In parallel with this, training of prosecutors and the judiciary is also being addressed.

The NGO approach to stopping the killing typically involves helping strengthen Government operations at specific sites, usually PAs with important elephant populations (see Volumes 2 to 5 for many regional examples). This may cover training and equipment, including specialised equipment such as drones and tracker dogs. WCS and the South Sudan Government have a national level elephant protection and monitoring program in place tracking all the remaining major elephant groups in south Sudan. Save the Elephants provides elephant tracking services via Google Earth to provincial anti-poaching control centres in Kenya to help guide deployment of ranger forces and provide rapid response to poaching incidents. UNDP has made funds available for the creation and installation of a similar elephant collaring and monitoring system for the Greater Ruaha ecosystem in Tanzania[31].

Occasionally individual elephants, invariably big tuskers, get special protection. The whereabouts of a bull named Satao, bearer of the biggest known tusks in Kenya, were monitored daily from the air by the Tsavo Trust as part of their *Big Tusker Project*. Despite this he was killed by poachers in late May 2014 and some speculate whether it was leaked information as to his location that led to his downfall. Close protection may backfire if any of those involved are or become corrupt.

1.4.4.2 Stopping the Trafficking

This strategy is based on realisation of the need to integrate and coordinate the work of different agencies involved all along the ivory value chain between the killing site at one end, to the buyer of raw ivory or an ivory carving at the other.

Although catalysed primarily by the ivory and rhino horn trades, emerging anti-trafficking measures such as Wildlife Enforcement Networks (WENs) are relevant and applicable to any illegal natural product, and as such are discussed in an entire separate chapter of this Report dedicated to the trade in African wildlife generally (see section 3.7 below).

Anti-trafficking measures being taken specific to ivory include the following:

- establishment by CITES of an Ivory and Rhino Enforcement Task Force
- registration and securing of ivory stockpiles, including comprehensive marking and inventory of stored ivory. Tools exist for stockpile management including an ivory inventory database user's manual developed originally for the CITES Management Authority of Gabon, and a new system devised by the NGO '*Stop Ivory*' for establishing an inventory using an 'App' on electronic tablets that meets all CITES information storage requirements, including photographs of all tusks
- destruction of ivory stockpiles: in addition to the important publicity and awareness-raising value of such measures, their destruction is recommended because they are costly to secure and maintain; divert

[30] Roughly EUR 180,000
[31] Under its Strengthening the Protected Area Network in Southern Tanzania Project (SPANEST)

scarce resources away from front line elephant conservation; and their content may enter the illegal supply chain (through theft) and drive speculation[32].

- forensic investigation to determine the provenance of seizures – the subject of detailed discussion in section 1.4.5 below
- deployment of sniffer dogs specifically trained to detect ivory in port and airport situations.

It should be noted also that analysis of the ETIS data is able to identify those countries most heavily implicated in illegal ivory trade flows and the roles they play in the trade as source, transit or end-use countries. These results are essential for identifying and monitoring those countries which are failing to address serious ivory trade issues. Where progress is not occurring, in spite of repeated interventions, such countries are liable to sanctions under CITES.

1.4.4.3 Stopping the Demand

Clearly the prime targets of demand-reduction efforts must be the current and potential consumers throughout East and South East Asia, principally China and Thailand, but there are still ivory markets in the west also (e.g. the USA). A strategic response can only be effective if it is built on a good understanding of the drivers for consumption in each of dominant consumer countries. Obviously these will vary from country to country, so relevant research is a first requirement on the basis of which country or locality-specific actions to neutralise drivers can then be designed.

TRAFFIC is leading on consumer research approaches, while several major international NGOs are already conducting targeted and effective awareness campaigns much influenced by the finding that the majority of consumers simply do not know anything about the cruel and devastating impacts of the illegal trade in ivory[33]. In order to highlight this they are cleverly and effectively exploiting local culture and enlisting local celebrities to the cause. Artists working for IFAW for example have embellished the Chinese character for elephant to show bloody ivory and used this in advertisements. STE, in collaboration with WildAid and UNEP, brought the Chinese basketball star Yao Ming and leading Chinese actress Li Bingbing to Africa and then distributed articles and film of their reactions to gruesome poaching scenes hopefully to good effect. Following such efforts, more and more truly indigenous conservation movements are taking up the challenge.

A recent study has shown that a more important issue perhaps is dealing with the demand stimulated by a growing Chinese interest in arts investment[34]. Efforts from NGOs and authorities of the sort described above have greatly improved public awareness of the problems. These endeavours should be continued, but they should be more targeted by grounding them in a realistic contextual and factual understanding of consumers and their motivations. To facilitate this, it is necessary to go beyond the conservation sector and involve current non-participants who may have an important role to play in this issue, for example, the arts investment community, cultural preservation groups, and religious groups.

Calls to curb demand by closing all domestic ivory markets through involuntary, legal mechanisms are gaining strength. Some US markets have been closed down recently (see 3.3.2 and 3.3.4), and all other countries with active domestic markets are under increasing pressure to follow suit.

[32] The need for destruction may be repetitive: in countries with large populations the annual accumulation of ivory from natural mortality alone is very high, meaning stockpiles are continually being replenished one way or another

[33] e.g. the awareness and attitudinal survey carried out in China as part of an ivory demand study by WildAid and STE in 2012 (http://www.wildaid.org/sites/default/files/resources/WEBReportIvoryDemandinChina2014.pdf)

[34] Yufang Gao, Susan G. Clark (2014) Elephant ivory trade in China: Trends and drivers. *Biological Conservation* 180:23-30

1.4.5 Forensic investigation to determine the provenance of seized ivory

An aspect of the effort to understand and dismantle trade networks that is specific to elephant conservation is the need to be able to trace seized ivory back to its natural origin. Adding this information to records of the ports through which it was trans-shipped should greatly improve the chances of national and international enforcement networks being able to reconstruct and then disrupt the transit routes and trade syndicates involved in moving the ivory from source to final destination. This need has been recognised in two Decisions made at the March 2013 CITES CoP16, firstly to examine forensic investigation techniques for sourcing and ageing ivory as well as identify relevant facilities, and secondly to require all Parties to submit samples from large scale seizures (500kg or more) for forensic analysis (see also Box 3). These decisions underpin Urgent Measure 14 adopted by the Elephant Summit which is to "*Support the development of a network of accredited forensic laboratories able to determine the origin of seized ivory according to internationally standardized protocols for DNA and isotopic analysis that can provide evidence admissible in a court of law*".

Through ICCWC, the CITES Secretariat is working closely on ivory forensics with the United Nations Office on Drugs and Crime (UNODC) which assists States in gaining access to quality forensic scientific services in their efforts to combat illicit drugs and crime. As a result, UNODC has recently produced a manual on "*Guidelines on methods and procedures for ivory sampling and laboratory analysis*". Law enforcement officers responsible for the investigation of cases involving large-scale ivory seizures are often confronted with the challenge of identifying the most appropriate way to collect and submit specimens to appropriate facilities for forensic analysis. The UNODC Manual provides a practical guide that shows best practices and logistical procedures. It is intended for worldwide application, to facilitate the use of wildlife forensics to the fullest extent possible to combat wildlife crime, and in particular illegal ivory trade. It includes detailed protocols on methods of ivory sampling and analysis, which can be applied by law enforcement officers and by laboratories with appropriate facilities.

While forensic labs exist for wildlife generally such as that run by the USFWS in Ashland (and are even being developed in a number of African supply and Asian consumer countries), there are very few specialising in products from specific taxa such as rhinos (horn) and elephants (ivory). UNODC is drawing on its partnership with the World Bank under ICCWC to bolster capacities of laboratories in affected countries (see 3.2.5).

At present, expertise in ivory-specific forensic analysis is being developed around two complementary methodologies, the one based on DNA, the other on isotopes. The lab directed by Prof Sam Wasser at the Centre for Conservation Biology in the University of Washington is leading with the former approach, having assembled an important reference collection of ivory samples from around the continent: it is said his team can now ascertain the geographic origin of a tusk to within a 160-mile radius[35]. DNA analysis focused on origin has already produced interesting results that prove its potential utility (see Box 2, for example).

[35] But this level of precision has never been independently validated

Box 2. Ivory DNA Analysis

The testing of 6.5 tons of illegal elephant ivory seized in Singapore in 2002, 3.9 tons confiscated in Hong Kong in 2006, and another 11 tons confiscated in Hong Kong, Taiwan, and Japan (also in 2006) determined that the massive consignments came from closely related elephants in specific localities: eastern Zambia for the Singapore seizure, a small section of eastern Gabon and neighbouring Congo for the single Hong Kong seizure, and southern Tanzania/northern Mozambique for all samples in the 11-ton seizure. Forensic analysis also has the power to link suspects to specific crimes. In addition to providing information on where a tusk came from, DNA analysis can be used to identify individual elephants killed in a particular incident. When a mass killing occurs, tissue samples from carcasses can be analyzed, so that when and if the tusks enter the illegal market, they can be matched to that same incident. DNA analysis could also be used to show domestic ivory markets are operating legally. Recently, Chinese officials have disputed allegations of large-scale importation of illegal ivory and insisted that there is no linkage between their legal imports and the massive elephant poaching presently taking place. One way they could prove their point would be to provide random samples of ivory from China's legal markets for DNA analysis. If that analysis showed that it is all from Botswana, Zimbabwe, South Africa, and Namibia, where one-off sales were allowed, such allegations could be rejected. But if the DNA analyses pointed to origins elsewhere, such as the Democratic Republic of Congo, Chad, Tanzania, or Kenya, there would be clear grounds for rejecting the Chinese claims.

A potential problem with the Washington lab however is an alleged reluctance to share its reference materials with other labs meaning its methods cannot be replicated elsewhere, thus maintaining an effective monopoly on DNA-based forensic investigations of ivory[36]. Another is neither it nor any of the other labs which are currently sourcing ivory to geographical locations have ever had their results independently verified anywhere else. A final problem is the lab's alleged lack of neutrality in the ivory trade debate, which inhibits some range States from using its services. Given that UNODC actively supports the work of this lab while promoting ivory forensics globally, it is to be hoped these concerns will be resolved in the near future.

The separate isotopic approach, which provides both age and source information (based on chemicals linked to diet), is being led by scientists working for the German Federal Agency for Nature Conservation. A pre-declared intent of this programme is to give other labs unrestricted access to its reference data collection, but this is still being built.

It is reported that the sourcing of ivory or tissues for reference "libraries" has been a major problem, with many range States just not participating: hopefully they will in time become more cooperative as the participating labs become more open and neutral. To encourage this, it is clearly important to ensure that forensic labs are independent and de-linked from any advocacy activities.

A separate development that acknowledges the potentially crucial role of forensic investigations in combating elephant poaching and ivory trafficking throughout Africa is the decision taken by the CITES Secretariat at the recent internal launch meeting (8-9 January 2014) for the MIKES Project, to incorporate a new project component relating to forensic investigations, under Result 4: International actions. A provisional budget of US$300,000 has been allocated, as part of the broader Result 4 budget line for MIKES Emergency Responses. Although the specific forensic activities to be supported are yet to be fleshed out (this will be done during the preparation period of the project prior to the main project launch in January 2015), the CITES Secretariat envisages that the

[36] Other institutions reported to have experience in ivory-DNA analysis are Duke University and the University of Copenhagen. Utah University has experience in isotopic analysis.

main focus of support will be for building capacity for carrying out forensic investigations at the site level[37], as well as for piloting the application of forensic techniques at different levels throughout the forensics chain (i.e. site-national-international levels).

1.4.6 Human-elephant conflict

Human-elephant conflict (HEC) continues to pose a serious challenge throughout the elephant range, and the cursory mention afforded to it here is in no way commensurate with its huge importance as a symptom of what is arguably the biggest long term threat to elephant survival, which is the rapid conversion of land in Africa leading to habitat degradation and permanent range loss. Both land conversion and Human Wildlife Conflict in general are considered more fully in the broader context of the various regional volumes of this Report.

Much of the problem lies in the fact that most mitigatory actions are very expensive, particularly in the case of HEC. Fencing is a prime example, with NGOs such as Rhino Ark devoting their entire programme to this approach. Although a number of innovative methods are emerging to add to the toolbox to help mitigate HEC (such as the strategic deployment of beehives along farm boundaries by Save The Elephants), long-term land use planning and cooperative management of elephant populations with local communities are required to provide sustainable solutions. Studies of elephant movement patterns are ongoing in many sites and these are expected to provide useful information for land-use planning that would minimise future conflict (e.g. identification of corridors).

1.5 ACTIONS RECOMMENDED FOR EU SUPPORT

Range States need urgent and sustained financial and technical support for: anti-poaching work in the field; to strengthen and enforce national laws protecting elephants and preventing trafficking; to deliver national, regional and international intelligence-sharing and law-enforcement efforts; to safeguard habitats; and to support communities which live alongside elephants, particularly with regard to the development of sustainable livelihoods and the reduction of human-elephant conflict.

Although the actions needed to conserve the African elephant therefore are many and are replicated throughout its range, the scale and diversity of the response to date is such that any additional contributions from the EU need to be carefully focused. On the basis of the review presented here, it is recommended that this focus should embrace the following urgent, short and medium term interventions.

1.5.1 Urgent and short term measures

1.5.1.1 Support to priority and emergency measures through the Funding of Funds

The formal adoption of the African Elephant Action Plan (AEAP) by all Range States is a remarkable and important achievement that deserves, in line with AES Urgent Measure 8, wider recognition by way of input to the associated African Elephant Fund (AEF)[38]. As noted earlier, donations to date have been limited, perhaps due to the fact that the Steering Committee (SC) is made up of Government representatives raising concerns firstly as to the proportion of funds that will be spent on what is needed, and secondly as to its ability to develop large-scale

[37] Assumed to mean best-practices for the collection of samples in the field, and their preservation and packaging for onward transfer to a specialist laboratory for analysis
[38] This overall position with respect to the AEAP is exactly consistent with that recommended by the recent Expert Conference on the EU Approach against Wildlife Trafficking.

projects. Given the involvement of UNEP and the commendable grant-giving procedures in place, the former concern is invalid. In the opinion of several persons closely involved in the evolution of the AEAP and AEF however, the second concern remains valid at least in the sense that the political dimensions of so many Range Sates competing for limited funds probably means it will always remain a small grants fund.

The advice therefore is to boost donations, but in sensible increments until such time as the Fund has proved (or otherwise) its ability to absorb more. If the EC wishes to pursue its interest in supporting the AEF, it is recommended that it makes an initial donation of no more than EUR 1.0m and encourages the SC to try and leverage additional funds against it.

Given the crisis nature of the current situation, the EC is understood to be keen to contribute to unforeseen emergencies but none of its existing mechanisms allow this, and the emergency funds to be provided under MIKES are not yet available. Of the various funds devoted elephants, it appears that only the Elephant Crisis Fund (ECF) is geared specifically to genuine emergency action without site-specific pre-conditions. Access to such flexible and quickly mobilised resources is potentially of very great assistance to Governments and other NGOs alike. Accordingly it is further recommended that the EC should consider making a donation to the ECF, perhaps matching any made to the AEF.

As noted, the ECF's basic strengths lie in its ability to respond quickly to support multiple institutions working on different aspects of the ivory crisis. Led by two well-respected non-profit organizations, the ECF combines the elephant conservation experience and network of Save The Elephants (STE) with the financial and administrative efficiency of the Wildlife Conservation Network (WCN). This combination provides a unique model to jumpstart and scale up immediate strategic interventions by rapidly deploying financial resources to carefully vetted field partners. STE leads the project review and vetting process: WCN leads the financial and administrative requirements of grant administration. A strong emphasis is placed on efficiency, with a short application turn-around, streamlined reporting requirements, and communications conducted virtually to ensure maximum inputs are given to conservation efforts.

The ECF is committed to guaranteeing that 100% of funds will be used to support actionable, on-the ground programs that save elephants. Two other characteristics set the ECF apart:

- Donors can double the impact of their contributions with a dollar for dollar match (currently up to a total of $1 million)
- Donors who contribute more than $5,000 may designate their gift to support specific actions, such as anti-poaching efforts, anti-trafficking efforts, decreasing demand, or to be used as an additional match.

1.5.1.2 Forensic analysis of ivory in Africa

The importance of being able to ascertain the provenance of seized ivory is elaborated above, but the ability to do so remains limited. In line with Urgent Measure 14, a network of suitably equipped laboratories is needed in both Africa and Asia to ensure the requisite analyses can be carried out as cost and time-effectively as possible. This is of increasing importance now that CITES parties are required to submit samples from large-scale seizures for analysis (see also Box 3).

Box 3. Forensic investigation of ivory seizures

In the coming months, compliance with the CITES decision for Parties to submit samples from large-scale ivory seizures should be closely watched. While some countries might assert that financial constraints prevent them from sending in DNA samples, the truth of that claim is suspect because the analysis itself will be funded by outside sources. If a country opts not to submit samples, one might speculate whether it is doing everything it can to stop elephant poaching and ivory trafficking. And it might cause one to wonder if the government was allowing seized ivory to find its way into the illegal trade. It is in this context a matter of considerable concern to note that none of the countries that have destroyed ivory stockpiles since this decision was made have either inventoried or done any forensic work on their ivory before doing so (including the US, which had strongly supported the decision). These wasted opportunities represent a serious loss of invaluable information. In contrast, a willingness to supply samples from seized ivory will help demonstrate a country's commitment to stopping the illegal ivory trade.

CITES and UNODC are in the process of identifying facilities in which such capacity could be developed. An obvious candidate in Africa is the Veterinary Genetics Laboratory (VGL) at the University of Pretoria, a facility that has pioneered the DNA-based analysis of rhino horn (see 2.4.5). Another potential candidate in Africa is the forensic lab being developed by the Kenya Wildlife Service, originally to address bushmeat seizure issues (see 3.2.2 in Volume 3). From 1st to 5th September 2014, UNODC conducted a joint field visit to Botswana with experts from TRACE Wildlife Forensics Network and the Netherlands Forensic Institute to carry out a coordinated assessment of wildlife DNA forensics and identify possible models for developing wildlife DNA forensic capacity. The Agence Nationale des Parcs Nationaux (ANPN) in Gabon also is working with UNODC to develop a lab there.

The development of forensic labs capable of analysing the identity and provenance of a variety of wildlife products, not just ivory and rhino horn, is an important part of the overall approach to curbing the trafficking of wildlife in general. Accordingly recommendations on EU support for forensic labs are presented under the Trade section of this Volume (see 3.9.3.4).

1.5.1.3 Support for forest census work

As noted earlier (1.4.3.2), the funds available for counting elephants in forest are very limited. The need for objective and repeatable enumerations of forest populations is really critical, because without the live elephant numbers the strength of MIKE information is greatly reduced. In order to secure full value for money invested in MIKES therefore, it is recommended that the EC secures additional funds to this end in line with AES Urgent Measure 5. Subject to confirmation by the executants, it is estimated that censusing all MIKE forest sites probably requires funding in the order of at least EUR 2.5 million over two to three years.

However there are many other sites apart from MIKE sites that need to be surveyed especially in Central Africa (see Volume 4). Overall the important forest elephant sites (including MIKE) will cost about 4 to 5 million dollars to survey over the next 5-7 years (F. Maisels, pers. comm.). At the time of writing in November 2014 there were indications that the Paul G. Allen Foundation might contribute to ground as well as aerial surveys, but the extent and duration of that support remain unknown. Competent donor coordination is therefore needed.

1.5.1.4 Support for the African Elephant Database and African Elephant Status Report

Recent and current pressures on the African elephant are attracting a huge amount of attention from all quarters. All these interested parties rely on the AfESG for accurate information on the status of the species. Therefore, it is vital that the AfESG is enabled to continue providing reliable and up-to-date information to allow well-informed decision making and actions. Many of the new commitments and initiatives at local, national and international levels rely explicitly on verifiable evidence of elephant numbers and trends for financial assessments to be disbursed. Accordingly, the AfESG is urgently seeking finance to ensure that the African Elephant Database (AED) can meet these expectations, now and into the future[39]. Also under discussion is the potential addition of other important databases of African species to the AED platform (e.g. lions and buffalos), which could bring considerable synergies, not least of which could potentially be real cost savings to all those sharing it.

The AfESG and its Data Review Working Group have numerous ideas for improvements and enhancements to the AED, but lack the resources needed to underpin its Secretariat's ability to implement them, making the AED one of the AfESG's highest fundraising priorities. Currently there is only one full-time staff member on the AED, and dedicated funds are sought to hire a database manager to oversee the AED, including undertaking those infrastructural improvements that have been identified as essential.

The AfESG also needs funds to update and publish a full African Elephant Status Report (AESR) in both 2015 and 2018, as well as conduct a new Red List Assessment for the species in 2018.

1.5.1.5 Ivory in the European Union

In line with the USA and other nations, the EU and its Member States should develop a new Regulation to close domestic ivory markets, beginning with the implementation of Article 11 of the European Parliament resolution on wildlife crime, adopted in January 2014, which called on EU Member States to "*introduce moratoria on all commercial imports, exports and domestic sales and purchases of tusks and raw and worked ivory products until wild elephant populations are no longer threatened by poaching*".

Furthermore, and following the example of Belgium, it is recommend that any such Regulation includes the destruction of ivory stockpiles, in accordance with Article 12 of the European Parliament resolution which calls on Member *States "to join other CITES Parties in sending out a clear signal against wildlife trafficking and demand for illegal wildlife products by destroying their stockpiles of illegal ivory"*. This would incontrovertibly demonstrate that EU Member States do not tolerate either trafficking in ivory, or the poaching driven by that trade. It would also place the EU in a strong position to encourage other governments to follow suit, which is important in countries where stockpile 'leakage' is problematic.

Although contested by some commentators[40], the destruction of stockpiles, and the closure of domestic ivory markets, are fully consistent with the decisions of the CITES CoP.

[39] As of November 2014 US$ 288,000 were still being sought to complete the co-funding required for a full 4-year programme. A detailed proposal and budget is available from the AfESG.
[40] 't Sas-Rolfes M., Moyle B. and Stiles D. (2014). The complex policy issue of elephant ivory stockpile management. *Pachyderm* 55: 62-77

1.5.2 Medium and long term measures

1.5.2.1 Monitoring and coordination

Without continual monitoring, the objective basis on which to decide what actions are needed where and how urgently will be lost. The longer one studies any animal the better one understands it and as the 30 year Amboseli Elephant Project continues to show, this is especially true of a very long lived animal like the elephant.

It is important therefore for the EC to recognise the need to sustain its support for MIKES and ETIS indefinitely. In other words it should already start preparing for a follow-on to the next phase which will end in mid-2018

At the same time all stakeholders in elephant conservation need to recognise the invaluable services and inputs provided by the AfESG in terms of general coordination; technical guidance and advice given to CITES, managers across the African elephant Range States, donors, interested parties and the general public. To the urgent support needed to maintain the AED and periodically publish the AESR already highlighted in 1.5.1.4 may be added that required to edit and publish the journal *Pachyderm*[41]. All this is typically done on a shoestring, and efforts to sustain the flow of core funds needed to support adequate staffing all across the range, hold and attend meetings, and publish documents etc, currently consume a disproportionate amount of the core staff's time.

Although the MIKES budget includes nominal money for specific activities of the AfESG, such piecemeal funding is both insufficient and unsustainable. The EU's previous core support grant to the AfESG was highly successful and its evaluation showed a high level of delivery against objectives. The present study would like to recommend therefore not only that the EC should provide fully comprehensive core funding to the AfESG over at least 5 years, but also to all other Specialist Groups with a remit in Africa. Although not all make contributions equivalent to those of the AfESG, they do all face funding challenges to some extent. A suitably well-endowed programme should be negotiated with IUCN's Species Survival Commission.

It should be noted that by helping understand the status of many taxa and their conservation and management needs, this single intervention has the potential to provide multiple benefits. As such it would be an extremely cost-effective use of conservation funds.

For similar reasons of coordination, it is recommended that the EC extends its support for the CITES Joint Ivory and Rhinoceros Enforcement Task Force, whether directly or through the ICCWC. Recommendations regarding other, complementary support to these two bodies are presented in the Wildlife Trade chapter of this Report (see 3.9.3.1).

1.5.2.2 Direct support to key elephant populations and ranges

In other parts of this Report, arguments are presented to justify a need to focus EC resources on a selection of areas that are of such outstanding importance and value that basically a commitment should be made to protect them for posterity, and at all costs. It is further argued that if that perception of value is primarily one of the developed world, then it is the developed world that must be ready and willing to bear those costs, alone if absolutely necessary.

[41] *Pachyderm* is managed in its entirety by the AfESG and publishes papers and notes concerning all aspects of the African elephant, the African rhino and the Asian rhino with a focus on the conservation and management of these species in the wild. At the same time, the journal is a platform for disseminating information concerning activities of the AfESG, the AfRSG and the AsRSG.

The elephant features as one of a few major criteria used in the identification of these "Key Landscapes for Conservation" (KLCs)[42]. There is no doubt this is justified, not simply because of its own charisma and the knock-on benefits to other ecosystem features to be derived from securing a wide-ranging "apex species", but also because conserving elephants comes with costs that host nations often find socially, politically and economically difficult to meet or even to accept. In the Eastern African part of this Report It is suggested that all areas containing more than 5% of a region's elephants should be classified as Very Important Elephant Areas and automatically be considered for inclusion in its list of KLCs (see Volume 3, section 4.2.1).

An indefinite commitment to KLCs that hold elephants is the most effective way in which the EC can make a contribution to the species' survival in perpetuity.

As part of this overall commitment, including support for behavioural research on elephants is particularly compelling because of the very large areas over which they have to range. Their movements, very often far outside the boundaries of PAs, bring them into greater contact not only with elephant poaching gangs but also with rural farmers. Human elephant conflict is an issue that alienates local populations and leads to further killing of elephants. Much effort is required to try and address the problem of elephant movements outside PAs, including the development of secure elephant corridors. Care needs to be taken that potential corridors are not just drawn on maps without taking the elephants' natural movement and habits into account. It follows that money on research to identify actual travel routes would be well spent before millions are invested in corridor developments that may otherwise fail.

[42] A fuller description of the criteria used to select the final list of the continent's KLCs is given in Volume 1, section 5.1

Annex 1

AFRICAN ELEPHANT SUMMIT URGENT MEASURES[43]

The Delegates assembled at the Summit dedicated themselves to providing political support at the highest level to ensure the implementation of the following Urgent Measures to halt and reverse the trend in illegal killing of elephants and the illegal trade in ivory, for implementation or initiation by the end of 2014, although it is understood that the measures will remain relevant beyond 2014.

Urgent Measure 1. Applying a zero tolerance approach, **secure and report on maximum, and therefore deterrent, sentences for wildlife crime** using a combination of existing laws and strengthened regulatory frameworks for investigation, arrest, seizure and prosecution of suspected wildlife criminals; such laws may include, *inter alia*, wildlife, corruption, money laundering, organized crime, fire arms, employment and terrorism laws.

Urgent Measure 2
Form and support **National Interagency Mechanisms** to allow immediate action against anyone implicated in or abetting illegal killing of elephants and the illegal trade in ivory.

Urgent Measure 3. Enhance capacity of law enforcement and wildlife protection agencies at the national level to respond to well-armed, highly-organized poaching syndicates.

Urgent Measure 4. Introduce elephant poaching and the illegal ivory trade as a standing agenda item of **National Security Committees** (or their equivalent) in countries where proceeds from these criminal activities are known or are likely to be used to fuel internal conflict, armed rebellion or external aggression. Include, where possible, the head of the national wildlife agency on the National Security Committee (or its equivalent) in these countries.

Urgent Measure 5. Over the next year, in order to support evidence-based decision-making, pool efforts to **improve the coverage of monitoring of**: a) African elephant populations, transmitting data as a matter of urgency to the IUCN/SSC African Elephant Specialist Group, the agreed data repository for elephant population data; b) levels of illegal killing, transmitting data as a matter of urgency to CITES MIKE, the agreed monitoring programme; and c) levels of illegal trade, transmitting data as a matter of urgency to ETIS, the agreed monitoring programme.

Urgent Measure 6. Strengthen cooperation among law enforcement agencies in range, transit, and consumer states, including through participation in activities of the **CITES Ivory Enforcement Task Force**, and, through the use of controlled deliveries, whenever possible, and other appropriate law enforcement techniques; with support from the International Consortium on Combatting Wildlife Crime (ICCWC).

Urgent Measure 7. States that are signatories to **regional wildlife law enforcement networks** such as the Lusaka Agreement Task Force (LATF); Rhino and Elephant Security Group of Southern Africa Development Community (SADC); Horn of Africa Wildlife Enforcement Network; the Central African Wildlife Enforcement Network; ASEAN Wildlife Enforcement Network; and the recently proposed Wildlife Enforcement Network for

[43] https://cmsdata.iucn.org/downloads/african_elephant_summit_final_urgent_measures_3_dec_2013.pdf

Southern Africa; recommit their individual support to the objectives of the regional agencies and to meeting their material, financial and human resource commitments.

Urgent Measure 8. Mobilise financial and technical resources from various national and international sources utilizing those mechanisms that best support the implementation of the African Elephant Action Plan and these agreed urgent measures at national, regional and continental level.

Urgent Measure 9. Design and carry out national studies and **public awareness programs,** aimed at all sectors, which include information on the ramifications of illegal killing of elephants and the illegal ivory trade on the economy, national security, public safety and the ecosystem services elephants provide.

Urgent Measure 10. Implement efficient measures to register **and secure ivory stockpiles**, including comprehensive marking and inventory of stored ivory, as agreed under CITES Resolution Conf. 10.10 (Rev. CoP16).

Urgent Measure 11. Develop and implement strategies to eliminate the illegal trade in ivory and use evidence-based campaigns for supply and demand reduction that use targeted strategies including, where appropriate, government-led approaches, to influence consumer behaviour.

Urgent Measure 12. In African elephant range States**, engage communities living with elephants as active partners in their conservation** by supporting community efforts to advance their rights and capacity to manage and benefit from wildlife and wilderness.

Urgent Measure 13. Strengthen existing or implement new legislation to classify wildlife trafficking involving organized criminal groups as a "serious crime" to effectively unlock international law enforcement cooperation provided under the United Nations Convention Against Transnational Organized Crime, including mutual legal assistance, asset seizure and forfeiture, extradition, and other tools to hold criminals accountable for wildlife crime.

Urgent Measure 14. Support the **development of a network of accredited forensic laboratories** able to determine the origin of seized ivory according to internationally standardized protocols for DNA and isotopic analysis that can provide evidence admissible in a court of law.

Implementation

Each country will assess its progress with implementation of these Urgent Measures and will report on a voluntary basis to appropriate regional and international fora such as, but not limited to:

- further one-off meetings on wildlife crime;
- Meetings of the CITES Standing Committees meetings;
- The next sessions of the IUCN World Conservation Congress;
- Annual African Union Summits;
- Regional economic cooperation fora
- African Elephant Fund Steering Committee
- Meetings of the Conferences of the Parties to CITES and CMS
- Meetings of the United Nations General Assembly;
- Meetings of the United Nations Environment Assembly.

2 SECTION 2. INTER-REGIONAL SECTION ON RHINOS

ACRONYMS

AfRSG	African Rhino Specialist Group (of SSC)
ARCAP	African Rhino Conservation and Action Plan
ASEAN	Association of South East Asian Nations
AsRSG	Asian Rhino Specialist Group (of SSC)
AWF	African Wildlife Foundation
BR	Black Rhino
CAP	Conservation Area for Posterity
CEESP	Commission on Environmental, Economic and Social Policy (of IUCN)
CITES	Convention on International Trade in Endangered Species
CODIS	Combined DNA Index System
CoP	Conference of the Parties
DEA	Department of Environmental Affairs (South Africa)
DNA	Deoxyribonucleic acid
FBI	Federal Bureau of Investigation
EC	European Commission
EUR	Euro
GEF	Global Environment Facility
ICCWC	International Consortium on Combating Wildlife Crime
IGO	Inter-governmental Organisation
INTERPOL	International Criminal Police Organisation
IUCN	International Union for the Conservation of Nature
KLC	Key Landscape for Conservation
KWS	Kenya Wildlife Service
NGO	Non-governmental Organization
NWR	Northern White Rhino
PA	Protected Area
RhODIS	Rhino DNA Identification System
RMG	Rhino Management Group
RTCF	Rhino and Tiger Conservation Fund
SA	South Africa
SADC	Southern Africa Development Community
SANParks	South African National Parks
SSC	Species Survival Commission of IUCN
STE	Save The Elephants
SWR	Southern White Rhino
TCM	Traditional Chinese Medicine
TRAFFIC	The wildlife trade monitoring network
UfW	United for Wildlife
UNEP	United Nations Environmental Programme
USA	United States of America
USFWS	US Fish and Wildlife Service
VGL	Veterinary Genetics Laboratory
WEN	Wildlife Enforcement Network
WR	White Rhino
WWF	Worldwide Fund for Nature
ZSL	Zoological Society of London

The recent history of rhinoceros species in Africa sends mixed messages. The Southern White Rhino provides one of conservation's great success stories, having been brought from the brink of extinction to be the most numerous rhino in the world[44]. However, the stories of its Northern relative and the various races of Black Rhinoceros are of a dramatic conservation struggle in the face of an unremitting demand for rhino horn despite immense conservation efforts. In recent years this demand has escalated and with it the value of horn, to the point that no rhinos remain in West or Central Africa, and even the Southern White is under unprecedented pressure. Consequently many formerly secure rhino populations are now in grave danger. This is a cause for great international concern, and along with the parallel elephant/ivory situation was a key catalyst for the present study of African conservation needs and strategies on behalf of the European Commission (EC).

2.1 DISTRIBUTION AND STATUS

White Rhinoceros (*Ceratotherium simum*)

Two subspecies are recognized: the Southern White Rhino (SWR) *C. s. simum* in southern Africa, and Northern White Rhino (NWR) *C. s. cottoni*, with currently only one confirmed population in Ol Pejeta (a private Kenyan conservancy) that was created in December 2009 following the translocation from the Czech Republic of the last four potentially breeding NWR in captivity.

The Northern White Rhino used to range over parts of north-western Uganda, southern Chad, south-western Sudan, the eastern part of Central African Republic, and north-eastern Democratic Republic of the Congo. The previous only confirmed population in Garamba National Park in north-eastern Democratic Republic of the Congo is now considered extinct despite systematic ground surveys over probable range and additional foot patrols and aerial reconnaissance. Although there was an unverified sighting in the Domaine de Chasse in 2012, and a trickle of unconfirmed reports of rhino in Southern Sudan, no incontrovertible sightings of live rhinos have been made since 2007 (see the photo chosen as a frontispiece to this volume).

The Southern White Rhino is now the most numerous of the rhino taxa, with South Africa remaining the stronghold for this subspecies despite increased poaching. Sizeable populations occur in the greater Kruger National Park (which incorporates additional private and state reserves) and Hluhluwe-iMfolozi Park, but also occur in numerous state protected areas and private reserves (some of which are also well protected) throughout the country. There are smaller reintroduced populations within the historical range of the species in Namibia, Botswana, Zimbabwe and Swaziland, while a very small number may survive in Mozambique. Populations of Southern White Rhino have also been introduced outside of the known former range of the subspecies to Kenya, Uganda and to Zambia.

Black Rhinoceros (*Diceros bicornis*)

Throughout most of the 20th century, the Black Rhino was the most numerous of the world's rhino species which at one stage could have numbered around 850,000. Relentless hunting of the species and clearances of land for settlement and agriculture reduced numbers and by 1960 only an estimated 100,000 remained. Between 1960 and 1995, large-scale poaching caused a dramatic 98% collapse in numbers.

[44] In 1910, it is thought only about 100 animals remained

Three recognized subspecies of Black Rhinoceros now remain, occupying different areas of Africa. A fourth recognised subspecies *D. b. longipes* once ranged through the savannah zones of central-west Africa but it is now considered to have gone extinct in its last known habitats in Northern Cameroon.

The other three more numerous subspecies are found in eastern and southern African countries. The putative *D. b. bicornis* range includes Namibia, southern Angola, western Botswana, and south-western and south-eastern South Africa, although today they occur only in Namibia (the stronghold) and South Africa with a sighting of one animal in Angola and unconfirmed reports of possibly another three animals. Following translocations from Namibia and subsequent population growth, numbers of this subspecies are increasing in South Africa with its distribution covering more arid areas in the south west of the country, and expanding into the Eastern Cape.

D. b. michaeli was distributed from southern Sudan, Ethiopia, and Somalia, through Kenya into northern-central Tanzania and Rwanda. Its current stronghold is Kenya. Smaller numbers occur in northern Tanzania. The single animal that survived in Rwanda has died. One important free-ranging population occurs outside its range in a private game reserve in South Africa. Contractually, these *D. b. michaeli* animals may only be translocated back to historical range and not elsewhere in South Africa. The repatriation of some of these animals back to former subspecies range in Tanzania commenced in 1997, with animals going to Mkomazi Game Reserve and Ngorongoro Crater Conservation Area and the most recent being five animals moved to the Serengeti National Park, Tanzania in 2010.

D. b. minor is believed to have occurred from southern Tanzania through Zambia, Zimbabwe, and Mozambique to the northern, north-western and north-eastern parts of South Africa. It also probably occurred in southern Democratic Republic of the Congo, northern Angola, eastern Botswana, Malawi, and Swaziland. Today, its stronghold is South Africa and to a lesser extent Zimbabwe, with smaller numbers remaining in southern Tanzania. The South-central Black Rhino is probably now extinct in Angola and Mozambique. The subspecies has also been reintroduced to Botswana, Malawi, Swaziland and Zambia.

The latest available data on the status of all rhino species and sub-species extant in Africa today are given in Table 3[45]. As shown, the majority of Africa's (black and white) rhinos (98.0%) are conserved by just four range States: South Africa, Namibia, Kenya and Zimbabwe. Botswana, Tanzania and Swaziland each conserve over 100 rhinos with smaller numbers in Zambia, Malawi, Uganda, Mozambique and Angola.

The White Rhino as a species is currently listed as Near Threatened on the IUCN Red List, but its status is under review because if current poaching trends continue unabated it could soon qualify for re-classification as either Vulnerable or Endangered. The Black Rhino is listed as Critically Endangered.

By 1977, all African rhino species were listed on CITES Appendix I, and all international commercial trade in rhinos and their products was prohibited. However, following a continued increase in numbers, the South African population of Southern White Rhino was downlisted in 1994 to Appendix II, but only for trade in live animals to "approved and acceptable destinations" and for the (continued) export of hunting trophies. In 2004, Swaziland's Southern White Rhino were also downlisted to CITES Appendix II, but only for live export and for limited export of hunting trophies according to specified annual quotas.

[45] Emslie RH and MH Knight (2014) Update on African Rhino status and poaching trends from the AfRSG. Report submitted to the 65th Meeting of the CITES Standing Committee, 7-11 July 2014.

Table 3. African Rhino numbers: continental and regional totals (31 December 2012)

Species	White Rhino *Ceratotherium simum* (WR)			Black Rhino *Diceros bicornis* (BR)			
Subspecies	*C.s.cottoni* Northern	*C.s.simum* Southern	Total WR	*D.b.bicornis* SouthWestern	*D.b.michaeli* Eastern	*D.b.minor* SouthCentral	Total BR
Angola				1			1
Botswana		185	185			9	9
Malawi						26	26
Mozambique		1?	1?			0?	0
Namibia		524	524	1,750			1,750
South Africa		18,933	18,933	208	68	1,792	2,068
Swaziland		84	84			18	18
Zambia		10	10			27	27
Zimbabwe		284	284			424	424
SA region		20,021	20,021	1,959	68	2,296	4,323
Kenya	4	390	394		631		631
Tanzania					100	27	127
Uganda		14	14				
EA region	4	404	408	0	731	27	758
ALL	**4**	**20,425**	**20,429**	**1,959**	**799**	**2,323**	**5,081**

2.2 THREATS AND TRENDS

2.2.1 Illegal killing

The AfRSG has provided updated rhino poaching numbers up to the end of June 2014 (Table 4). While poaching encouragingly continues to decline in Zimbabwe, poaching at a continental level continued to escalate in 2013 with just over 1,100 being recorded poached. South Africa conserves 82% of Africa's rhinos and it also has experienced the most poaching in absolute terms since 2009 (for more information on rhinos in Southern Africa, see Volume 2 section 3.2.2). Poaching also spiked in Kenya in 2013, and while at similar levels in relative terms, rhino poaching in Kenya is now a little higher than in South Africa. While poaching levels in both these countries are currently still at sustainable levels (i.e. not currently leading to population decline); both are approaching the tipping point where poaching ceases to be sustainable and deaths will start to exceed births. Encouragingly, Table 4 shows that at a continental level poaching in the first half of 2014 has levelled off and remains at average 2013 levels (3.00 rhinos poached/day).

Table 4. Reported numbers of white and black rhinos poached in Africa (from 2010 to 30 June 2014[46])

Country	2010	2011	2012	2013	2014 (to June)	Total
Botswana			2	2		**4**
Kenya	22	25	29	59	23	**158**
Malawi			2	1	2	**5**
Mozambique	16	10	16	17	1 (min)	**60**
Namibia	2		1	6	10	**19**
South Africa	333	448	668	1,004	496	**2,949**
Swaziland		2			1	**3**
Tanzania	1		2		2	**5**
Uganda						
Zambia						
Zimbabwe	52	35	29	18	4	**138**
Total	**426**	**520**	**749**	**1,107**	**539**	**3,341**
Poached/day	**1.17**	**1.42**	**2.05**	**3.03**	**3.00**	

Data from IUCN SSC AfRSG, TRAFFIC and CITES Rhino Working Group

[46] Note that these figures represent the minimum number reported poached, and the true figure is likely to be higher as some carcasses will not have been detected (especially in very large areas or in the case of very young animals). Young calves that disappeared or died after their mothers were poached and injured animals that subsequently died are considered as poaching deaths. A few of the immobilised animals that had horns hacked off have survived but these too have been counted as poached.

AfRSG modelling against a realistic range of assumed net reproductive population growth rates predicts that if continental poaching continues to escalate exponentially in 2014 onwards as it has done since 2008-13 (+38.76% increase per year), then the "tipping point" - when rhino numbers start to decline because deaths exceed births at a continental level - could be reached sometime between 2014-2016. Furthermore, if poaching continued to increase exponentially at this rate, rhino numbers are predicted to drop to less than 10,000 (by over 60%) by the end of 2019, and reach 0 the following year. However the latter extinction in the wild is unrealistic as this simplistic modelling ignores the likelihood that the last few rhinos are likely to be harder to find and poach, and most probably would be under very high protection. In reality therefore, it probably would take longer to reach extinction than predicted by this simple exponential model.

Nonetheless this and other more conservative arithmetic models do highlight the urgent need to stop poaching from increasing, or at the very least to significantly slow its rate of increase, to buy more time for other initiatives such as demand reduction to work and prevent the gains of two decades being destroyed.

2.2.2 Illegal trade

The main threat to all rhinos is poaching for the international rhino horn trade. Historically the demand for rhino horn has been based on two main uses: traditional use in oriental medicine, and ornamental use (for example, rhino horn is a highly prized material for making ornately carved handles for ceremonial daggers or *Jambiyas* worn in some Middle East countries). Despite the fact that rhino horn was officially removed many years ago from the formal pharmacopoeias of most countries including China in favour of substitutes from other species (such as buffalo), and despite the fact that demand for jambiyas is now negligible, there has in recent years been an upsurge in black market prices for rhino horn accompanied by an increase in poaching in all range states.

These trends have coincided with the emergence of non-trraditional uses of rhino horn such as a supposed cancer treatment (for which there is no supporting clinical evidence of its effectiveness), and as a detoxification ingredient to be shared with friends as a symbol of wealth and high status. The latter is its main use in Viet Nam, to the extent that country is now rhino horn's largest consuming market[47].

While these coincidences are relevant, the explanation for the recent upsurge is much more complex, involving the sequence and interplay of many factors on both supply and demand sides of the market[48]. As a result the average retail price of rhino horn is believed to have risen from around $4,700 per kilogram in 1993 to as much as $65,000 per kilogram in 2012: if so rhino horn is now worth more, per unit weight, than gold, diamonds or cocaine. Such high value has encouraged a far more concerted and sophisticated organized crime element to enter the rhino horn market, and this is reflected in the tenacity and methods used by the current illegal suppliers. Robberies of horns from museum specimens across Europe have taken place. Even some dehorned rhinos have been poached because of the value of the remaining horn stubs.

2.2.3 Other threats

Civil unrest, the free flow of weapons and better communication systems all have had a significant negative impact on African rhino conservation efforts. Poaching and civil wars in both Democratic Republic of the Congo and neighbouring Sudan have had a devastating impact on Northern White Rhino, with no confirmed reports

[47] Milliken, T. and Shaw, J. (2012). *The South Africa – Viet Nam Rhino Horn Trade Nexus: A deadly combination of institutional lapses, corrupt wildlife industry professionals and Asian crime syndicates*. TRAFFIC, Johannesburg, South Africa. To download this report, go to: http://www.traffic.org/species-reports/traffic_species_mammals66.pdf
[48] 't Sas-Rolfes M (2012) The Rhino Poaching Crisis: A Market Analysis. http://www.rhino-economics.com

from either country in several years. Black Rhino populations in Angola, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Mozambique, Namibia, Rwanda, Somalia, Sudan and Uganda have to varying degrees all suffered from the consequences of war and civil unrest since the 1960s. The negative effects of conflict have been exacerbated when combined with lack of political will and lack of conservation expenditure by some governments. Some detrimental effects include trading of rhino horn and ivory for weapons, increased poaching due to increased poverty in times of civil unrest, and diminished levels of protection for rhino populations as funds are diverted away from wildlife departments.

In South Africa, live-sale of White Rhinos on auction, limited sport hunting of surplus males, and ecotourism have provided incentives for private sector conservation and generated much needed funds which can help pay the high cost of successfully monitoring, protecting and managing rhino. Historically this has resulted in a significant expansion of range and numbers on private land, to the extent that there are now more White Rhino on private land in South Africa than there are rhino in the whole of the rest of Africa. However increased poaching, increased security costs and perceived reduced incentives for their conservation have resulted in declining White Rhino live-sale prices, and an increasing number of owners is now seeking to get rid of their rhino. This worrying trend, which in 2014 shows no sign of abating, threatens to reverse the expansion of range, and has the potential also to significantly reduce conservation budgets (due to declining live sales) and negatively affect metapopulation growth rates in future.

The successful clamp down on pseudo-hunting by South Africa, the Czech Republic and Viet Nam that was initiated in early 2012 will have significantly constricted that particular source of illicit rhino horn supply (see Box 4), but the criminals so affected could be expected to compensate by turning to alternative sources such as illegal dehorning, poaching, thefts or robberies. However increases in poaching in Kenya and Zimbabwe in the last quarter of 2012 suggest that other factors completely unrelated to South Africa's policy decisions and legislative and law enforcement changes are needed to explain those increases, such as increasing demand and value in end-use markets, leading to expanding corruption (government involvement in the trade) and increasingly lucrative livelihood opportunities for poachers in source countries (greater numbers of poor people deliberately choosing to become rhino poachers for money).

Box 4. How South Africa fights pseudo-hunting

Pseudo-hunting refers to the procedure whereby European individuals with no hunting experience or background are recruited by Vietnamese middlemen representing organized crime groups to hunt rhinoceroses legally with the purpose of later obtaining their horns for purposes other than hunting trophies. To counteract this South Africa (currently the primary source for illegal rhino horn in light of the number of animals that continue to be poached there), has introduced additional measures in terms of the regulation of the hunting of rhinoceros. These include all applicants being required to provide proof: that they belong to hunting associations in their country of residence; that they have hunted African species before; and that they provide a *curriculum vitae* in this regard. In addition, South Africa considers whether the country of usual residence has legislation that will enable them to monitor the use of the trophy once exported from South Africa. In this regard, South Africa liaises with the importing countries as soon as applications are received. Since the introduction of these measures there has been a significant reduction in the number of applications to hunt rhinoceros and the applications received are from countries that historically hunted in South Africa. Permits are currently not issued to Vietnamese citizens and this restriction will remain in place until Viet Nam can confirm whether the rhino horn trophies exported to Viet Nam are still in the possession of the hunters. However, this approach could be abused if, as the Czech Republic reports, third country nationals claim to be the exporter whilst they are just middle men. To avoid this loophole, all countries should be encouraged to cooperate with the precautionary screening being undertaken by South Africa of all countries claimed as destinations, to ensure that rhino horns are only exported where the aforementioned requirements have been met.

Other threats that can cause populations to decline include habitat changes, competing species and alien plant invasions.

2.3 CONSERVATION PLANNING AND COORDINATION

In 1999, IUCN helped produce an African Rhino Conservation and Action Plan (ARCAP). This still provides the continental framework with guidelines for the successful conservation of African rhinos, highlighting specific actions that have formed and should continue to form part of successful rhino conservation strategies and policies. Range state management authorities and stakeholders have the responsibility and mandate to conserve rhinos in their respective countries, and the Continental plan seeks to provide them with guidance to assist in the development and implementation of sound rhino conservation policies and plans. Over the years IUCN SSC's African Rhino Specialist Group (AfRSG)[49] has, on request, routinely assisted Range States develop and revise their own national plans and strategies, and these are usually reviewed and updated every 5-10 years.

A list of known rhino strategies is given in Table 5. Southern Africa is the only region to have prepared its own plan, but this has not been updated since the end of funding for the SADC Regional Programme for Rhino Conservation. Otherwise, national action plans and strategies have been prepared by all countries with confirmed and viable populations. Even Mozambique, which has few if any rhinos of its own, is under pressure from CITES to submit an Action Plan to the Secretariat by 31 October 2014. This is because of the impact that the weak law enforcement capacity of that country is having on South African rhinos, and which facilitates the trafficking of South African horn to Asia through Mozambique. A number of bodies exist which provide oversight and coordination to these Plans. Chief amongst these is the AfRSG which maintains a database on the distribution and numbers of all sub-species and rates populations as "Key" and "Important" in terms of how critical they are for the species' survival.

Table 5. List of Rhino Action Plans by region and country

IUCN African Rhino Conservation and Action Plan (1999) SADC Regional Rhino Conservation Strategy 2005-10 and Guidelines for Implementing SADC Rhino Conservation Strategies (2006)			
Central Africa	**East Africa**	**Southern Africa**	**West Africa**
No rhinos left	• Kenya: Conservation and Management Plan for the Black Rhino *D.b.michaeli* 2012-2016 (2012) • Tanzania; Rhino Management Plan 2010-2015 (2010) • Uganda – No approved plan but a rhino conservation and management plan is being drafted and it is hoped this will be finalised in 2014	• South Africa: Biodiversity Management Plan for the Black Rhinoceros (*Diceros bicornis*) in South Africa 2011-2020 (2011) • South Africa: Strategy for the Conservation and sustainable use of wild populations of Southern White Rhino *Ceratotherium simum simum* in South Africa (2000) which will be replaced by Biodiversity Management Plan for the White Rhinoceros *(Ceratotherium simum)* in South Africa 2013-2018 (has been drafted and scheduled to be finalised 2014) • South Africa: National Strategy for the safety and security of rhinoceros populations in South Africa (2010) • Namibia: Black Rhinoceros Conservation Strategy (1997). This has been updated (first submission July 2010 and second submission Jan 2012 but still is awaiting final approval). • Namibia: Species Management Plan White Rhinoceros *Ceratotherium simum* (2012) • Zimbabwe rhino policy and management framework 2011-16 (2011) • Botswana: Conservation and Management Strategy for the White Rhinoceros *Ceratotherium simum* and the Black Rhinoceros *Diceros bicornis* in Botswana (2005) (which will be replaced by a version revised in 2010, with further edits in 2013, and which is awaiting formal ratification) • Swaziland: Rhino Management Strategy (2009) • Zambia: Rhino conservation plan 2005-2010(2005). This is due to be revised in 2014 • Malawi: Rhino Management Strategic Plan (2007)	No rhinos left

[49] The AfRSG is one of the many Specialist Groups that make up IUCN's Species Survival Commission, or SSC

All rhino range states are Party to CITES (as are most "consumer states"), and with all populations listed on either Appendix I or II, the Convention provides the single most powerful instrument available to influence action to protect and manage rhino populations on the one hand, and investigate and control the trade in live animals and horn on the other. CITES decisions on these matters are guided primarily on information collated and interpreted by the AfRSG, AsRSG and TRAFFIC, these bodies being mandated to report to Conferences of the Parties, the CITES Standing Committee and the Committee's Rhino Working Group.

Thus the AfRSG is the continental coordinating body for rhino conservation in Africa. In addition there are a number of regional African rhino conservation coordination initiatives including the South African Development Community (SADC) Rhino Management Group, the recently formed East African Rhino Management Group, and the Southern African Rhino and Elephant Security Group/Interpol Environmental Crime Working Group.

At a national level, the agency responsible for wildlife management is generally responsible for the implementation of country plans. National level associations also exist to coordinate private rhino holders, such as the Private Rhino Owners Association of South Africa, and the Association of Private Land Rhino Sanctuaries of Kenya.

2.4 ACTION BEING TAKEN

The recent escalation in rhino poaching has stimulated a significant response from IGOs, governments and NGOs comparable to that afforded the parallel elephant and ivory crisis. Indeed rhino horn is the more valuable commodity, 1 kg being worth more than 20 kg of ivory, and thus more easily transported and hidden than ivory.

The problems confronting the rhino however may be more intractable than those facing the elephant due to its longer history as an endangered species, and the fact that horn - unlike ivory - has alleged medicinal values.

Most rhino conservation plans and projects aim to support one or more of the strategic approaches discussed below. Government action in these areas generally conforms with the priorities identified in their respective Rhino Action Plans. Kenya and South Africa in particular have increased considerably the resources available to protect their rhino populations and to identify horn smuggled through or out of their countries.

2.4.1 Awareness raising

Awareness of the rhino poaching and horn trade crisis has been raised through a variety of means including publications, meetings, campaigns and other initiatives. A few notable examples are:

- In May 2011 the CITES Secretariat distributed an updated briefing document on the *Poaching of and illegal trade in rhinoceros*
- In 2012, in collaboration with the United Nations Television (UNTV), CITES produced a video documentary titled *Rhinos under threat* about the current surge in the illegal killing of rhinoceroses and the international trade in rhinoceros horn[50].

[50] See http://www.cites.org/eng/news/pr/2012/20120618_rhinos_under_threat_rio.php

- Many international and local conservation NGOs have responded to the poaching crisis with their own awareness and fund-raising campaigns to support specific rhino and horn-oriented programmes and projects addressing both ends of the supply chain, as well as the routes in between. AWF for example has partnered with WildAid and STE to undertake a public awareness campaign in China, and is initiating one in Africa and Viet Nam. WWF continues as probably the longest term supporter of rhino conservation in Africa.

- The investigative research and ensuing publications of Dr Esmond Bradley-Martin over more than two decades right up to date. His efforts more than any other helped curb the appetite for rhino horn *jambiya*-handles.

2.4.2 Funds dedicated to Rhino Conservation

- *Rhinoceros and Tiger Conservation Fund.* As part of its Wildlife Without Borders programme, the US Fish and Wildlife Service administers the RTCF. This covers both Asian and African rhinos, the latter including recent grants to projects in Kenya and South Africa.

- *Species Protection Grant Fund.* This is a trust fund raised and administered by the African Wildlife Foundation to protect a range of "flagship" species including African rhinos for which an associated action plan has been developed using an in-house methodology that identified 10 key populations qualifying for priority support[51]. The AWF plan is based on information from a Rhino Emergency Summit, comprising representatives of rhino range States, the private sector, government officials and non-governmental organizations, which it hosted at its Nairobi headquarters in April 2012. The aim of this Summit was to synthesise current thinking on what really needs to be done to save the rhino from the scourge of poaching and illegal horn demand, resulting in an independent global framework for action[52].

2.4.3 Monitoring and the biological management of metapopulations

All the key Range States have well established monitoring programmes which, through ear-notching and radio-tracking for example, are providing information to guide biological management decision-making aimed at managing rhino populations for rapid population growth. This has resulted in surplus animals being translocated to set up new populations both within and outside the species' former range.

2.4.4 Law enforcement

As for elephants and all endangered species, there are three principal strategies to counter the illicit trade that is threatening their survival and which address the full rhino horn value chain, namely Stopping the Killing, Stopping the Trafficking and Stopping the Demand. While some elements of each of these overarching strategic objectives as concern rhinos are discussed here, a much fuller discussion of their application to the illicit trade and trafficking of wildlife products in general (not just rhino horn), and from which rhinos will benefit, is given in sections 3.6, 3.7 and 3.8 of this Volume.

[51] AWF would not disclose the identity of these ten populations
[52] Ferreira, S. M. and Okita-Ouma, B. (2012). A proposed framework for short-, medium- and long-term responses by range and consumer States to curb poaching for African rhino horn. Pachyderm 51: 52 – 59.

2.4.4.1 Stopping the Killing

Effective field protection of rhino populations has been critical. Many remaining rhino are now concentrated in fenced sanctuaries, conservancies, rhino conservation areas and intensive protection zones where law enforcement effort can be concentrated at effective levels using very well trained and equipped anti-poaching forces. SANParks is now translocating rhinos from the important Kruger National Park population not only on strategic grounds (to move some animals to safer locations further from Mozambique) but also to enhance metapopulation growth rates. There are also plans to set up an Intensive Protection Zone in the south of the Park where most of the rhinos live.

Although this sort of approach has been favoured for over a decade, its efficacy is now being challenged as never before. Most range states have responded by boosting security even more but, apart from the difficulty of financing yet higher costs, many are already at the limit of what can be done and are finding that no amount of expenditure can give 100% protection from highly motivated and equally well-equipped poachers.

Other Government actions being taken to help stop the killing involve promulgation of truly deterrent punishments for persons caught poaching rhinos (and other wildlife). Here some countries lag far behind, such as Mozambique where until recently rhino poaching was still being treated more as a misdemeanour than a criminal act. Therefore it is to be welcomed that Mozambique in April 2014 finally approved new legislation criminalising rhino crimes with significantly increased penalties available. However the extent to which this new legislation will be applied and the conviction rates and penalties handed down remains to be seen. Concern continues to be expressed about arrested suspects in Mozambique being released without trial and what has happened to some firearms and rhino horns taken from poachers and handed in to authorities. Consequently the Environmental Investigation Agency and International Rhino Foundation have submitted a joint petition to US Authorities calling for Pelly Amendment Sanctions against Mozambique for their failure to properly address the rhino poaching and horn trafficking in which its citizens are involved[53]. As from December 2013, Kenya too has changed its legislation to include very stiff penalties for rhino poaching, but concerns remain as to possible loopholes (see Volume 3 for Eastern Africa, section 3.2.1).

The NGO and IGO approach to stopping the killing typically involves helping strengthen Government operations at specific sites, usually PAs with important rhino populations. The escalating threat of poaching is also stimulating an increasing effort to integrate local communities into rhino conservation programmes.

Strategically, both Black and White Rhinos are now managed by a range of different stakeholders (private sector, community and state) in a number of countries, with the involvement of the private sector in particular providing a critical boost to their overall and long-term security. Over 5,500 White Rhino are now managed by the private sector throughout Africa with the majority in South Africa. However as discussed above incentives are declining while protection costs and risks have increased resulting in increased numbers of South African owners looking to get rid of their white rhino. In contrast to Southern White Rhino, most Black Rhino on privately owned land are managed on a custodianship basis for the state, where they benefit from generally very well resourced and managed security measures.

[53] Under the Pelly Amendment to the US Fishermen's Protective Act, the President is authorised to impose trade sanctions against any countries seen to be undermining an international conservation agreement such as CITES. The threat of Pelly Amendment sanctions against South Korea and Taiwan prompted action to tackle the illegal rhino horn trade in those countries.

2.4.4.2 Stopping the Trafficking

To help reduce illegal trade and complement CITES international trade bans, domestic anti-trade measures and legislation were implemented in the 1990s by a number of the major consumer states and law enforcement effort has been stepped up in many consumer countries.

Following the threat of Pelly Amendment sanctions against Taiwan and potentially against South Korea and China, all three countries rapidly prohibited rhino horn use in traditional medicine in 1993 and took steps to enforce the ban and make it work. This led to a 15 year respite in serious rhino horn trading. Following protracted and unprecedented economic growth, the emergence of Viet Nam as a major end-use market in the mid-2000s is the predominant factor giving rise to the current resurgence in rhino horn trade. The dimensions of the current rhino crisis all date from around 2005.

Consequently, the illegal trade in rhinoceros horn continues to be one of the most structured criminal activities currently faced by CITES. There are clear indications that organized crime groups are involved in rhinoceros poaching and illegal rhinoceros horn trade. These groups operate in range States as well as Europe, where thefts of rhinoceros horns from museums, auction houses, antique shops and taxidermists have occurred. Seizures and arrests have also been made in Australia, Hong Kong, the Philippines and the USA[54]. Illegal rhinoceros horn trade has therefore become a major problem with an impact on several continents. Increased international cooperation and a well-coordinated law enforcement response are required to address this threat effectively.

Current responses are based on the need to integrate and coordinate the work of different agencies involved all along the transit chain between the killing site at one end, to the buyer of rhino horn at the other. Although catalysed primarily by the rhino horn and ivory trades, emerging anti-trafficking measures such as Wildlife Enforcement Networks (WENs) are relevant and applicable to any illegal natural product, and as such are discussed in a separate chapter of this Report which deals with the trade in African wildlife generally (see section 3.7 below).

Anti-trafficking measures specific to rhino horn include the following:

- establishment by CITES in May 2011 of a Joint Ivory and Rhinoceros Enforcement Task Force to undertake exchanges of intelligence regarding smuggling of ivory and rhinoceros specimens, and develop strategies for combating illegal trade. Besides the Secretariat, members include the ASEAN Wildlife Enforcement Network Programme Coordination Unit, INTERPOL, the Lusaka Agreement Task Force, the United Nations Office on Drugs and Crime, the World Customs Organization and those Parties in Africa and Asia that are currently most affected by the smuggling of ivory and rhinoceros specimens.

[54] In 2011 a unit of eight agents from the USFWS and prosecutors from the US Justice Department launched '*Operation Crash*', which has since undertaken a number of undercover investigations, resulting in the arrest of 18 people for trafficking, including owners of antique shops, a rodeo cowboy, a nail salon proprietor and a convicted drug dealer. In almost all cases, the smugglers were buying rhino horn through taxidermy websites, auction houses and through personal contacts in the US, and shipping it to China and Viet Nam. The US government estimates the 18 smugglers trafficked more than $10 million in rhino horn.

- On 28 and 29 October 2013 representatives from 21 source, transit and destination countries came together under the banner of the CITES Rhinoceros Enforcement Task Force in Nairobi, Kenya, to develop concrete strategies and actions to combat rhinoceros poaching and the illegal trade in rhinoceros horn. The Task Force meeting provided practical assistance to countries to implement enforcement-related CITES Decisions along with providing the opportunity for direct and focused interaction to support international cooperation and stronger enforcement actions on the ground

- means of monitoring and tracking of legal horns have been developed and are beginning to be implemented, most notably micro-chipping and forensic profiling

- forensic investigation to determine the provenance of illegal seizures – the subject of detailed discussion in section 2.4.5 below

- deployment of sniffer dogs specifically trained to detect rhino horn in port and airport situations (e.g. in Kenya with support from the USFWS Rhino and Tiger Fund)

2.4.4.3 Stopping the Demand

This approach aims to reduce market demand for rhino horn by conducting targeted and effective awareness campaigns. The principal targets of these efforts are the current and potential buyers throughout East and South East Asia, but principally China and Viet Nam. Unfortunately persuading these consumers to desist is likely to prove more difficult than for ivory. This is because the value of rhino horn is influenced by the medicinal properties attributed to it both traditionally and by more recent claims.

Be that as it may, efforts made to curb demand in Japan, South Korea and Taiwan during the 1970s, 80s and early 90s were a notable success, and give reason to believe the same can be achieved again[55]. The predominantly international conservation NGOs engaged in current demand reduction efforts believe that the battle to conserve rhinos can only be won if Asian consumers can be 'educated' or otherwise convinced that the use of rhino horn is inappropriate because 1) it is unethical to poach rhinos and 2) it cannot be scientifically proven to work as medicine. WildAid is one such an organisation that has had some success in using Asian celebrities to champion hard-hitting campaigns against the use of popular products such as shark-fin soup, while TRAFFIC is engaging with respected business leaders who are influential forces in society to promote a message that makes rhino horn usage socially unacceptable.

Unfortunately the contention that rhino horn has no medicinal value is not a universally accepted fact: indeed the TRAFFIC study commissioned by CITES on this very matter was unable to dismiss the possibility entirely[56], and in fact the one known proper double-blind clinical trial undertaken in Taiwan did find horn to have statistically significant fever-reducing properties, although was not as effective as a cheaper western medicine. Certainly the belief in horn's medicinal properties, including as an aphrodisiac, remains strong amongst Chinese consumers as revealed by an awareness and attitudinal survey carried out by WildAid and AWF in 2012[57].

[55] Although there is little hard evidence that it is: see article by S.I. Roberton of WCS (3 November 2014) http://voices.nationalgeographic.com/2014/11/03/has-demand-for-rhino-horn-truly-dropped-in-vietnam/
[56] Nowell K (2012) Assessment of Rhino Horn as a Traditional Medicine. CITES SC62 Doc. 47.2 Annex (Rev. 2)
[57] http://www.wildaid.org/sites/default/files/resources/WEBReportRhinoHornDemand2014.pdf

Even if Western science were to establish that rhino horn has no healing properties, this would not easily negate the deeply held beliefs and customs of the rich ancestral Eastern cultures involved. A strong belief just in itself is enough to create efficacy through the mysterious but real placebo effect. Combine this with customs that make those responsible for the sick honour-bound to try every last option for a cure, irrespective of cost, or face disgrace, and the difficulty of removing rhino horn from TCM's pharmacopeia becomes clearer[58]. Indeed these influences probably contribute to the persistent demand for rhino horn, despite China having banned its use since 1993. At the same time one must bear in mind the fact that as base populations and their disposable incomes continue to grow, so too will the number of consumers to be "re-educated", which also will work against demand reduction efforts achieving a significant impact.

These challenges notwithstanding, CITES commissioned TRAFFIC to produce a demand reduction strategy that was annexed to the Report presented by the Rhino Working Group at CoP16 in March 2013[59]. It is notable that the Strategy includes no specific mention of trying either to debunk rhino horn's medicinal efficacy, or to publicise the cruel nature of the killing. Rather it sensibly calls for more research before these and other approaches could be mounted with sufficient confidence to be sure of the desired impact. To this end TRAFFIC is for example, profiling rhino horn buyers and users in Viet Nam in a very detailed manner in order to identify and segment the target audiences for the campaign.

2.4.5 Forensic investigation to determine the provenance of seized rhino horn

An ability to trace confiscated horn back to its natural point of origin through forensic analysis has long been recognised as a potentially powerful tool for understanding and dismantling the trade networks involved. The same methods can be used also to register legal stocks, and aid their identification in the event of theft.

In June 2012 the Governing Council of the Global Environment Facility (GEF) approved a project to strengthen wildlife forensic capabilities in South Africa to combat wildlife crimes. The US$ 2.6 million project was developed in cooperation with the Department of Environmental Affairs of South Africa and the United Nations Environment Programme (UNEP), and with the support of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and assisted by a number of invited specialists and experts including IUCN SSC's AfRSG. The objective of the project is to strengthen the intelligence gathering and data analysis capacity of South Africa's overall wildlife sector through forensic-based technologies focused on the rhinoceros. The GEF funding was to be used by the Government of South Africa for a dedicated forensic laboratory facility to provide timely DNA analysis of forensic evidence for the prosecution of wildlife crimes, and enhance the existing coordination and information sharing among all actors involved in the law enforcement and anti-poaching efforts in the country and the region. The Department of Environmental Affairs of South Africa was designated the Executing Agency for the project with UNEP as the Implementing Agency. Both greatly contributed to the elaboration of the project.

The Veterinary Genetics Laboratory (VGL) at the University of Pretoria has emerged as the country and indeed the continent's leading forensics lab with regard to rhinos specifically. The AfRSG report that was presented to CoP16 via the CITES Secretariat in March 2013 discusses forensics but makes no mention of the GEF project[60]. It notes specifically however that the comprehensive reference database for rhino DNA developed and run from

[58] In a situation like this where consumers are unable or unwilling to accept and purchase substitutes, the price of the product in demand should be "inelastic". Economic analyses have shown the price of rhino horn is indeed "inelastic", and are able to explain why consumers will not be deterred by ever higher prices (see Footnote 48 for Ref).This of course is a cause for great concern
[59] TRAFFIC (2013) A strategy for reducing the demand for rhino horn products of illegal origin. CITES CoP16 Doc. 54.1 (Rev. 1) Annex
[60] Emslie RH, Milliken T and Talukdar B (2013) African and Asian Rhinos: Status, conservation and trade. CITES CoP16 Doc. 54.2 (Rev.1) Annex 2

VGL (known as RhODIS[61]), continues to expand, and DNA analyses are increasingly being used in criminal investigations and prosecutions. It notes also that a total of 12,000+ samples from 5,600 rhino have been collected and submitted to the VGL. Since April 2012, South Africa legally requires horn stockpiles and trophies to be DNA-sampled, as well as all animals that are immobilised in management operations. Special collection kits have been developed to ensure that the chain of evidence is maintained.

As discussed in the relevant other sections of Volume 6 on elephants, ivory and wildlife trade generally, forensic capabilities are relevant to the trade in many species, not just rhinos (see 3.7.5.4). Appropriately therefore, the CITES Secretariat is taking the lead in coordinating initiatives to develop and use relevant technologies.

2.4.6 Consumptive utilisation

As with elephants and ivory there is, and has been for many years, a strong divergence of both perspective and opinion between southern and east African range states as to the role of consumptive utilisation as a means of supporting rhino conservation through the significant additional resources that could be so generated to increase intelligence and anti-poaching efforts and reduce cost:benefits for poachers. The southern states with generally larger, better protected populations are pro (see Volume 2, section 3.2.2.2), while the opposite applies in the east

2.4.6.1 Sport hunting

White Rhino (WR) sport hunting recommenced in 1968 when there were only an estimated 1,800 Southern White Rhino (SWR) left in the wild in one country, South Africa (SA). Today WR may be hunted legally in Namibia as well as SA[62], and while it is predominantly males that are hunted the odd old female may occasionally be taken.

In SA the WR hunt is not controlled through an official quota, but by a licensing system. At current hunting levels a quota is not deemed necessary as there are no concerns as to the sustainability of the offtake: the numbers currently hunted are only just over 0.5% of the population.

All applications for a licence to hunt rhino must now go from the Provincial authorities through to the responsible Minister also (effectively through Department for Environmental Affairs, DEA), as an extra check and balance. There is a system in place to try to ensure all hunts will further demographic and/or genetic conservation goals, with the SADC Rhino Management Group providing DEA with an independent check on the evaluation and scoring of applications.

Recent legal hunting data for WR in South Africa are shown in Table 6. An approved permit is valid for 12 months. Thus an application can be made and approved in one year, with the animal hunted in the next. There are fewer hunts than applications because some applications from nationals of countries such as Viet Nam and Czech Republic are not being approved at the moment as a result of the major legislative changes introduced in 2012 to control pseudo-hunting (see Box 4).

[61] The principle of the RhODIS™ (Rhino DNA Identification System) database is based on the CODIS system of human DNA profiles of the FBI, hence the name. The main aim of this database is the forensic application of matching recovered horns to poached rhino carcasses.

[62] Although Swaziland was granted a nominal hunt quota by CITES, they have not hunted any WR as yet. The reason for obtaining a quota was to keep management options open should they end up with an aggressive male that was killing other rhinos. Rather than export the problem animal elsewhere, its removal through a legal hunt would generate much needed revenue to support conservation efforts, or buy a replacement rhino to boost population vigour.

Table 6. White Rhino legal hunting data (South Africa)

Year	Applications	Licensed hunts
2011	226	173
2012	91	73
2013	109	91

Source AfRSG/DEA

The data in Table 6 show the huge impact these changes had on both applications and the number of hunts. In 2010, 70% of applications to hunt were from Vietnamese, and 2011 was the year of peak applications and hunts. Applications to hunt have declined considerably since the implementation of the measures introduced in 2012.

While SA's WR are on CITES Appendix II, Namibia's are on Appendix I. Nonetheless, some WR can be and are hunted in Namibia. However, details of the process or how many hunts have been approved and taken place in recent years could not be obtained before going to press, but the offtake is far below that of SA.

By the end of 2013, SA and Namibia conserved between them an estimated 19,460 or 95.3% of the SWR in the wild. Despite the recent well publicised problems with pseudo-hunting in SA, on balance hunting has played a net positive role in the expansion of WR numbers and range. Any bans on the importation of WR hunting trophies would likely have negative consequences for WR conservation in these two countries.

In 2004 the CITES CoP13 approved very limited annual hunting quotas of up to five **Black Rhinos (BR)** in both SA and Namibia. The quota represents less than 0.3% of the population, and in the case of BR only males are hunted.

Decisions on rhinos to be hunted in Namibia are made by the Ministry of Environment and Tourism and money raised (less expenses) goes into a ring-fenced account for rhino projects in Namibia's Game Products Trust Fund. In SA, a hunt has to meet specific criteria showing it will further demographic and/or genetic conservation goals in order to qualify for consideration. One cannot simply apply to hunt just to raise money. As an independent check the SADC Rhino Management Group review applications to ensure they meet criteria and to give feedback to the DEA which makes the final application approval decisions each year.

Since 2004 neither country has hunted all the BR they could, and BR range and numbers have increased further in both countries to an estimated 3,820 or 75.1% of the African total. Counter-intuitively, hunting of very small numbers of specific individual "surplus" black rhino bulls can enhance the demographic and genetic conservation of the species.

Apart from being sustainable, to date hunts of both species have also generated additional revenue to support and incentivise conservation efforts in line with recommendations in CITES Resolution 9.14 (Rev). The positive role or rhino hunting was recognised at IUCN's last World Conservation Congress.

2.4.6.2 Horn farming and trading

The South African government has for some time been seriously exploring the contentious issue of getting the current trade ban lifted particularly – but not exclusively - so that private rhino owners could harvest and sell horn from live animals (state and community owned horn also would be traded)[63]. Indeed, following a long public consultation the South African cabinet recently approved that a proposal to trade be developed and submitted for consideration at the next CITES Conference of Parties in 2016 (CoP17). Whether this goes ahead remains to be seen because a recent questionnaire survey of 104 rhino experts and owners recommended that South Africa should not lift the current national moratorium on the trade in rhino horn while an international ban existed. The survey indicated that doing so might lead to greater laundering of horn onto the illegal market, tarnishing South Africa's conservation and compliance image.

After South Africa, Namibia conserves the next largest number of white and black rhinos (8.9%) conserving slightly more rhino than in the rest of Africa (excluding South Africa) combined. Its latest approved national white rhino strategy also calls for the development of a legal trade in rhino horn. Thus the two most successful and most important African rhino range states that together conserve in excess of 91% of the continent's rhinos have indicated a desire to trade horn in future.

It is interesting to note here that enterprises in China are advocating a similar horn-farming approach, and have already imported White Rhinos for captive breeding apparently with that ultimate end in mind[64,65]. In this case however, China's own 1993 ban on the use of rhino horn would have to be lifted.

In terms of scientific feasibility the approach appears sound, and many have argued that a very skilfully regulated legal trade, in which horn is harvested renewably from live animals, would offer financial incentives for rhino ownership and potentially deliver benefits to local communities and the state also [66,67].

Put simply however, those with a pure conservation agenda could only support a legal horn trade if there was incontrovertible evidence that it would significantly reduce the illegal killing of wild rhinos and/or the demand for their horns throughout Africa. It is very unlikely that either sustainable hunts or horn-farming can do this because - while they may not threaten the species directly - they can and do open the door to illegal trade. The "evidence" that legalised trade would generate a directly positive impact on wild populations is largely theoretical, and assumes a degree of tight control that in reality would always be very difficult if not impossible to achieve.

The problems encountered in the management of pseudo-hunting are a reminder of such difficulties (see Box 4). Putting in place the controls necessary in both the supply country and the hunter's home country to prevent this scam generates associated management costs that offset the revenue obtained. In any case, however diligent the enforcement machinery such controls can never pre-empt every scam.

[63] In other words advocates hope a legal trade would once again incentivise private sector and community to conserve rhino and help reverse a worrying trend where increasing numbers of private sector owners are seeking to get rid of their rhino or have already done so
[64] Yanyan D and Qian J (2008) Proposal for protection of the rhinoceros and sustainable use of rhinoceros horn. State Soft Sciences Project, Development Strategy for Traditional Chinese Medicine Research, Chinese Institute of Science and Technolgy, Beijing
[65] Cota-Larson R (2013) Rhinos from South Africa to China: a troubling timeline. Annamiticus, South Africa pp 1-15
[66] Child B (2012) The sustainable use approach could save South Africa's rhinos. S Afr J Sci. 108(7/8), Art. #1338, 4 pp
[67] Biggs D, Courchamp F, Martin R and Possingham H 2013. Legal trade of Africa's rhino horns. Science 339:1038-1039

All in all there is a strong risk that legal trading would in practice have the opposite effect on wild populations to that intended. The institutional and market arrangements needed to manage a legal trade would – irrespective of their sophistication - not only be extremely costly but also, in view of the intractable and price-inelastic nature of the demand[48] be quite unable to close the black-market for illegal horn any more effectively than has the current total ban.

These and other doubts have received a powerful boost from a very important study published as recently as June 2014 which dismisses the key economic assumptions and arguments advanced by leading pro-trade anlaysts as invalid[68]. The counter-arguments are too complex to detail here, but the inescapable conclusion is that there is no branch of economic theory, let alone practice, that can result in a positive, stable outcome from a proposed market beset with real-world complexities including: the vicissitudes of production from non-equilibrium wild herbivore populations; surrounding human communities who live in extreme poverty; management authorities infused with a culture of corruption stemming from the highest levels of their governance; and, most intractably, a growing and capricious demand from the Far East being served by a middle-man trading system rife with criminality. A mechanism able to balance supply and demand in such a milieu appears increasingly illusory. Because of all these compelling reasons to question the viability of a regulated trade in rhino horn, it remains extremely unlikely that CoP17 will approve any related applications. The risk and cost of failure is too high.

2.4.7 Rhino Impact Bonds

The AfRSG has been working closely with the Zoological Society of London (ZSL) and other United for Wildlife (UfW) partners to investigate, develop and try a new innovative form of funding of field conservation action. The Royal Foundation of Princes William and Harry and the Duchess of Cambridge is interested in exploring the possible value of “Impact Bonds” as a rhino conservation-funding tool. The idea is that each project bond will have a set of measurable target deliverables (such as increasing rhino numbers by *x* or keeping poaching below *y*). The concept is that philanthropists provide initial funding for such impact bonds and, if the project is successful in delivering against the measurable objectives set out, the philanthropists will be reimbursed by other participating bodies such as the Global Environment Facility (GEF) or governments. Unlike traditional grant projects, governments or donors only have to pay out on successes, and philanthropists are also given incentive to back good projects likely to deliver so they can get their seed funding back and be able to re-invest it to achieve more.

Following a February 2014 meeting coinciding with the London Illegal Wildlife Trade Conference, the concept and a draft document jointly prepared by ZSL, Social Finance and AfRSG were presented to potential funders. The idea was welcomed by the GEF and an initial Project Identification Form for US$ 2 million to develop and test out the concept was submitted to and approved by GEF. The various cooperating partners are assisting by developing a full GEF proposal and liaising with the Royal Foundation to seek support to boost the initial funding for the demonstration phase of the project up to a total of US$ 5 million.

[68] Nadal, A and F. Aguayo (2014) Leonardo’s Sailors: a review of the economic analysis of wildlife trade. LCSV Working paper Series No6. The Leverhulme Centre for the Study of Value, School of Environment, Education and Development, University of Manchester. The senior author, Alejandro Nadal, is a Professor at the Centre for Economic Studies, El Colegio de México and Chair of the Theme on the Environment, Macroeconomics, Trade and Investment (TEMTI) of CEESP-IUCN

If this funding model proves to work in practice, the hope is that it could be rolled out on a bigger scale. In the initial stage it has been decided to focus on a few projects relating to a small number of Key black, white and greater one-horned rhino projects in Africa and Asia. At the time of writing those involved are working to review and decide on possible sites to fund.

2.5 ACTIONS RECOMMENDED FOR EU SUPPORT

The basic strategy for rhinos going forward must be to have at least one or two viable populations of each sub-species survive the current onslaught. If that can be done a recovery from the brink, as proved once before, always remains possible.

The preceding review of issues and actions suggests that any EC support to this objective would be best directed towards the following short and medium term interventions.

2.5.1 Urgent and short term measures

2.5.1.1 Forensic analysis of rhino horn in Eastern Africa

The importance of being able to ascertain the provenance of seized rhino horn was noted in 2.4.5 above. As also noted there, capacity for this within Africa is well established at the VGL lab in Pretoria, and is under development at the KWS lab in Nairobi (see 3.2.2 in Volume 3).

Because labs capable of analysing rhino horn have the potential also to determine the provenance of ivory, as well as the identity of any animal tissue sample, their development is an important part of the overall approach to curbing the trafficking of wildlife in general. Accordingly recommendations on EU support for forensic labs are presented under the Trade section of this Volume (see 3.9.3.4).

As regards rhinos specifically however, it can be noted here that further development of these laboratories would be in line also with the following resolutions:

- a motion passed at the recent IUCN World Conservation Congress calling upon African range States to expand further the use of DNA profiling of horns (using the RhODIS) as an innovative means of combating the illegal killing of rhinos and the trafficking of horn

- the recommendation put forward in the AfRSG's report to CoP16 that "*the use of standardised DNA profiling (using RhODIS protocols for African rhino horn and a similar initiative for Asian horn) needs be expanded to other States around the world with ex-situ rhinos and horn stocks (particularly zoos and museum specimens) to facilitate monitoring and investigations with regard to illegal trade in horn*"[69].

2.5.1.2 Reducing the demand for rhino horn

Rhinos are in real danger of extinction if current trends continue unabated. Given that the trade in horn is the primary cause of this situation, it follows that much effort must be put into disrupting that trade. Of the approaches available to do that, reducing or even eliminating the basic consumer demand that drives the trade remains the most promising and must therefore be a priority for funding support.

[69] TRAFFIC (2013) *A strategy for reducing the demand for rhino horn products of illegal origin*. CITES CoP16 Doc. 54.1 (Rev. 1) Annex

Not only will changing perspectives on effective action emerge from the ongoing work of TRAFFIC and the NGOs already working on the ground in Asia (see 2.4.1), but any attempt to change the attitudes of centuries and the behaviour of very many millions of people will require a massive effort to be sustained over many years, which will not be possible without strong support from major donors like the EU.

2.5.2 Medium and long term measures

2.5.2.1 Monitoring and coordination

Without continual monitoring, the objective basis on which to decide what actions are needed where and how urgently will be lost. It is in this context that all stakeholders in rhino conservation need to recognise the invaluable services and inputs provided by the AfRSG in terms of general coordination, technical guidance and advice given to CITES and managers, maintenance of the population viability and importance ratings, and publication of the journal *Pachyderm*[70]. At the last three CITES CoPs, the AfRSG together with the AsRSG and TRAFFIC have submitted joint reports on behalf of range states which then form part of the CITES Secretariat's report to the Parties on Rhinos: many of these reports' recommendations have become Decisions approved by the Parties.

All this is typically done on a shoestring, and efforts to sustain the flow of money needed to hold and attend meetings, publish documents etc consume a disproportionate amount of the core staff's time.

The present study would like to recommend not only that the EC should provide fully comprehensive core funding to the AfRSG over at least 5 years, but also to all other Specialist Groups with a remit in Africa. This is because they all make contributions equivalent to those of the AfRSG, and they all face similar funding challenges. A suitably well-endowed programme could be negotiated with IUCN.

It should be noted that by helping understand the conservation needs of very many taxa, this single intervention has the potential to provide multiple benefits. As such it would be an extremely cost-effective use of conservation funds.

For similar reasons of coordination, it is recommended that the EC extends its support for the CITES Joint Ivory and Rhinoceros Enforcement Task Force, whether directly or through the ICCWC (see also 3.9.3.1).

2.5.2.2 Direct support to key rhino populations

In other parts of this report, arguments are presented to justify a need to focus EU resources on a selection of areas that are of such outstanding importance and value that basically a commitment should be made to protect them for posterity, and at all costs. It is further argued that if that perception of value is primarily one of the developed world, then it is the developed world that must be ready and willing to bear those costs, alone if absolutely necessary.

[70] Pachyderm publishes papers and notes concerning all aspects of the African elephant, the African rhino and the Asian rhino with a focus on the conservation and management of these species in the wild. At the same time, the journal is an important platform for disseminating information concerning activities of the AfRSG and the AsRSG.

There is no doubt that rhinos, along with certain other iconic species, should feature as a major criterion in the identification of these "Key Landscapes for Conservation" (KLC), not simply because of their own charisma, but also because they provide a very good example of species whose last best hope may well lie in high western perceptions of their value. Rhinos do indeed feature as one of the criteria used to identify KLCs (see Volume 1, section 5.1).

It is clear from the review above and other analyses of options, that intensive *in situ* protection and biological management is the most effective conservation strategy but that this comes at an extreme cost if it is be effective against the highly motivated and very well equipped poaching syndicates operating today. Consequently many if not most range States will find it very difficult to provide and sustain this level protection to all, or even some, of their populations without external assistance.

An indefinite commitment to KLCs that hold key rhino populations is probably the most effective way in which the EU can make a contribution to the species' survival in perpetuity.

At the same time however, the species' extreme endangerment argues for action to protect all priority rhino populations, even if they are not in KLCs. As noted earlier, the IUCN's AfRSG maintains a list of ***Key*** and ***Important*** rated populations, as well as data on the current status of each. However for security reasons (at the request of some range States) it does not generally release or publish these lists or data. Thus if in due course the EU commits funds to supporting rhino conservation, it should contact the AfRSG Secretariat directly which will then consider sharing this information on a confidential basis to help the EU select appropriate sites for projects that are of continental significance for rhino conservation.

As a possible feature of its support to rhino conservation, the EU should consider emulating the GEF as one of the institutional guarantors of Rhino Impact Bonds who would reimburse the initial philanthropist financiers in the event the envisaged impact target is realised (see 2.4.7).

3 SECTION 3. WILDLIFE TRADE

ACRONYMS

ACP	Africa Caribbean Pacific
AIRCOP	Airport Communication Programme
ANPN	Agence Nationale des Parcs Nationaux (Gabon)
ARREST	Africa's Regional Response to Endangered Species Trafficking
ASEAN	Association of South East Asian Nations
AU	African Union
AWF	African Wildlife Foundation
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
CA	Central Africa
CC	Consultative Communication
CCP	Container Control Programme
CCPCJ	Commission on Crime Prevention and Criminal Justice (of the UN)
CITES	Convention on International Trade in Endangered Species
CMS	Convention on Migratory Species
COMIFAC	Commission of Central African Forests
CoP	Conference of the Parties
CSI	Crime Scene Investigation
DEFRA	Department for Environment, Food and Rural Affairs
DETECT	Detection of Environmental Crime Training
DG DEVCO	EC Directorate General for Development and Cooperation
DNA	Deoxyribonucleic acid
DRC	Democratic Republic of Congo
EA	Eastern Africa
EAGLE	Eco Activists for Governance and Law Enforcement
EC	European Commission
ECOSOC	Economic and Social Council (of the UN)
EO	Executive Order
ETIS	Elephant Trade Information System
EU	European Union
EUR	Euro
FLEGT	Forest Law Enforcement Governance and Trade
FZS	Frankfurt Zoological Society
GEF	Global Environment Facility
GP	Global Programme for Combating Wildlife and Forest Crime
HAWEN	Horn of Africa Wildlife Enforcement Network
ICCWC	International Consortium on Combating Wildlife Crime
ID	Identity
IFAW	International Fund for Animal Welfare
IGAD	Inter-governmental Authority on Development
IGO	Inter-governmental Organisation
INTERPOL	International Criminal Police Organisation
IUCN	International Union for the Conservation of Nature
JPCU	Joint Port Control Unit
KWS	Kenya Wildlife Service
LAGA	The Last Great Ape Organisation

LATF	Lusaka Agreement Task Force
LE	Law Enforcement
MIKE(S)	Monitoring Illegal Killing of Elephants (and other Endangered Species)
MoU	Memorandum of Understanding
NCU	National Coordinating Unit
NEST	National Environmental Security Task Force
NGO	Non-governmental Organization
PA	Protected Area
PAW	Partnership for Action against Wildlife Crime
PROTECT	PA operational and tactical enforcement conservation training
RoC	Republic of Congo
SMART	Spatial Monitoring and Reporting Tool
TA	Technical Assistant/Assistance
TOCU	Transnational Organised Crime Unit
TRAFFIC	The wildlife trade monitoring network
TRAPS	Trafficking, Response, Assessment and Priority Setting
UfW	United for Wildlife
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNEA	United Nations Environment Assembly
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNGA	United Nations General Assembly
UNTOC	United Nations Convention against Transnational Organised Crime
UNODC	United Nations Office on Drugs and Crime
UNWTO	United Nations World Tourism Organisation
US(A)	United States (of America)
USAID	US Agency for International Development
USFWS	US Fish and Wildlife Service
VGL	Veterinary Genetics Laboratory
WA	West Africa
WACI	West African Coast Initiative
WCO	World Customs Organization
WCS	Wildlife Conservation Society
WEMS	Wildlife Enforcement Monitoring System
WEN	Wildlife Enforcement Network
WENSA	Wildlife Enforcement Network for Southern Africa
WIST	Wildlife Incident Support Team
WLFC	Wildlife and Forest Crime
WWF	Worldwide Fund for Nature
ZSL	Zoological Society of London

The global trade in wildlife is valued at many billions of dollars per year (Box 5). It includes both live animals (for the pet trade, research labs, zoos and aquaria) and their dead parts (for food, medicine, clothing, jewellery and ornaments). Although popularly associated with animals, the term wildlife encompasses flora also, and the trade in plants and trees (for medicine, fuel, timber, furniture and so on) is equally vast. While much of this commerce is legal, a great deal is not and the scale of the illicit wildlife trade and the corresponding pressure on the wild resource base are escalating alarmingly, with the national and international enforcement agencies tasked with combating this struggling to keep up.

Box 5. The value of the illegal wildlife trade

There are many different estimates of the financial value of illicit wildlife trafficking worldwide, but reliable estimates are hard to find, mainly because the trade is illegal. Unreported and unregulated fisheries trade alone has been estimated at between US$4.2 billion and US$9.5 billion per year, the value of the illegal timber trade as much as US$7 billion per year, and the illicit wildlife trafficking (excluding fisheries and timber) as between US$7.8 billion and US$10 billion per year. Combining these numbers, illicit wildlife trafficking (including timber and fisheries) comprises the fourth largest global illegal trade after narcotics, humans and counterfeit products.

The trade in wildlife has become increasingly attractive to transnational organised crime networks and now resembles in character and scale other types of global criminal activity, such as trafficking in drugs, human beings, firearms and counterfeit goods. Well-armed, well-equipped, and well-organized networks of poachers, criminals, and corrupt officials exploit porous borders weak institutions to profit from trading in illegally taken wildlife. With rebel militias and possibly terrorist groups also using it for funding purposes, wildlife trafficking poses a serious threat not only to biodiversity, but also to peace, security and livelihoods in affected territories.

Africa is arguably affected more than any other continent, because the conditions that encourage and facilitate the illegal trade in wildlife are generally more prevalent there than elsewhere. Not surprisingly, it is endangered species that are most seriously impacted. Whilst the ivory and rhino horn trades provide the most potent symbol of this problem, very many other species are affected. The list is far too long for exhaustive review here, but just a few species of notable concern can illustrate the diversity of taxa involved, such as the Chimpanzee[71], Pangolins[72], Abalone[73] and African Blackwood[74].

Of course the illegal trade in wildlife occurs both within and between national borders. Although it is international rather than domestic trade that most often poses both the greatest threat and greatest enforcement challenge, there are in either case many common features regarding both the drivers involved and the response needed. These are reviewed below in general terms: specific analyses of the trades in ivory and rhino horn are given in the overall Sections of this Volume 6 on Elephants (1) and Rhinos (2) that precede this one on Trade.

[71] *Pan troglodytes* (just one of the Great Apes affected)
[72] Scaly Anteaters with 4 African species: *Smutsia temminckii* (Cape or Temminck's ground Pangolin), *Smutsia gigantea* (Giant ground Pangolin), *Phataginus tricuspis* (Tree or African White-bellied Pangolin), *Uromanis tetradactyla* (Long-tailed or Black-bellied Pangolin)
[73] Large edible sea snails of the genus Haliotis, notably *H. midae* from South Africa. See Steinberg J (2005) The illicit abalone trade in South Africa. ISS paper 105. Institute for Security Studies, South Africa
[74] *Dalbergia melanoxylon* an extremely valuable wood used for musical instruments and carvings

3.1 FUNDAMENTAL CHARACTERISTICS

In wildlife trade, whether legal or illegal, there is always a value chain from the capture or harvesting of wildlife to its transportation and marketing to consumers. Intermediate collation and/or processing destinations are usually found along the chain. Organized criminal groups essentially form distribution networks across national boundaries linking source countries and consumer countries, often via important transit destinations. They commonly use indirect routes to avoid detection.

There are many different actors who facilitate the supply side of illicit wildlife trafficking. Illegal wildlife products are generated in a range of different ways – from local individual poachers who, facilitated by local middlemen, act out of opportunism or need; to criminal and rebel groups that seek to finance their illegal activities; and professional international hunters who use their experience for higher profit, often working for international clients. Illegal wildlife products can also come from legally hunted trophies, privately held stocks not declared or registered with the authorities, or the theft of products from private and public owners and institutions.

The well organized and equipped criminal groups involved are attracted by the availability of huge profits at a comparatively low risk, thanks usually to the absence of credible enforcement, prosecution, penalties and other deterrents, and the presence of corrupt officials all along the value chain.

Weak governance – meaning a weak rule of law and an associated lack of institutional checks on power - is thus a major driver of wildlife crime as it fosters corruption. Poverty also plays a key role in motivating actors, particularly those at the very bottom of the supply chain. Poaching thus tends to thrive in places where corruption is rife, government enforcement is weak and there are few alternative economic opportunities.

3.2 INTERNATIONAL TRADE REGULATORS AND MONITORS

3.2.1 ICCWC

The **International Consortium on Combating Wildlife Crime (ICCWC)** is based upon the idea that five international organizations with mandates and expertise related to the wildlife law enforcement chain could, by aligning their efforts, provide a catalyst for significantly enhanced global cooperation and capacity to combat wildlife and forest crimes.

ICCWC was formed in 2011 and is a collaboration between the CITES Secretariat, INTERPOL, the United Nations Office on Drugs and Crime (UNODC), the World Bank and the World Customs Organization (WCO). A profile of each of these members of ICCWC is given in sections below.

The consortium is supported by a Letter of Understanding between the five organizations which, by working collaboratively, form a unique pool of technical and programming expertise that can support national law enforcement agencies and regional enforcement networks, facilitate national multi-agency cooperation, assist countries to review their current responses to wildlife crime, and jointly develop capacity-building materials and tools to enhance the skills of national enforcement agencies in combating wildlife crime. Key aims include long-term capacity building (including the use of modern investigative techniques, such as DNA analysis), and improving international information and intelligence exchange for the better coordination of enforcement efforts.

The *ICCWC Strategic Mission 2014-2016* outlines five broad areas in which ICCWC will focus its activities to ensure that the perpetrators of serious wildlife and forest crime (WLFC) face a formidable and coordinated law enforcement response:

- Strengthening cooperation and coordination in combating WLFC
- Facilitating analysis of national responses to WLFC
- Building capacity to prevent and respond to WLFC
- Raising awareness and support for measures to combat WLFC
- Improving use of knowledge and innovation to inform contemporary approaches to WLFC

The *ICCWC Strategic Mission 2014-2016* is coordinated by the ICCWC Senior Experts Group (SEG) comprising technical specialists from all five organizations. The SEG is Chaired by the CITES Secretariat and meets quarterly to discuss ICCWC activities and matters related to ICCWC, and holds monthly teleconferences between face-to-face meetings. The Strategic Mission requires external funding, and the EC is among ICCWC's main donors, having provided EUR 1.7m over three years.

An important ICCWC product is the ***Wildlife and Forest Crime Analytic Toolkit***, built on the technical expertise of all ICCWC partners as well as through extensive consultations with experts from across the globe from a variety of related fields. The Toolkit is designed to facilitate national assessments of the main issues relating to wildlife and forest offences, and to identify the preventive and criminal justice responses needed at the national level. ICCWC will support countries interested in conducting such a review during the entire process – including in mobilizing funds, hiring experts, analysing the results, and designing and delivering technical assistance. However, the implementation of the Toolkit is fully government-led (see also 3.7.3.1 below).

ICCWC is also able to mobilise Wildlife Incident Support Teams (WISTs), composed of enforcement staff or relevant experts, to be dispatched at the request of countries that are affected by significant poaching of CITES specimens, or that have made large-scale seizures of such specimens, to assist, guide and facilitate appropriate follow-up actions in the immediate aftermath of an incident. In July 2013, Sri Lanka requested assistance from ICCWC, which subsequently deployed its first WIST, led by INTERPOL, to collect DNA samples from a large-scale ivory seizure for forensic analysis.

3.2.2 CITES

Despite its dramatic expansion and change in character over recent years, trading wildlife products is of course millennia old. In the mid 20th century however, a growing realisation that unregulated trade was threatening certain species led to a landmark international agreement between governments aimed at ensuring that international trade in specimens of wild animals and plants does not threaten their survival. Best known as CITES, the **Convention on International Trade in Endangered Species of Wild Fauna and Flora** was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN (the International Union for the Conservation of Nature). The text of the Convention was finally agreed at a meeting of representatives of 80 countries in Washington, D.C., on 3 March 1973, and on 1 July 1975 CITES entered in force.

Levels of exploitation of some animal and plant species are high and the trade in them, together with other factors, such as habitat loss, is capable of heavily depleting their populations and even bringing some species close to extinction. Many wildlife species in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important in order to safeguard these resources for the future.

CITES currently regulates international trade in about 35,000 species of wild plants and animals, and their parts and derivatives, with close to one million legal trade transactions per year being recorded on its publicly accessible data base. The vast majority of CITES-listed species, about 96%, are not necessarily threatened with extinction but they could become so if international trade were not strictly regulated. Trade in these species is allowed provided it is legal, sustainable and traceable and is worth about $300 billion per year. However, some 3% of CITES-listed species are threatened with extinction and they are found on Appendix I of the Convention. Commercial trade in these species is generally prohibited, such as for most elephants and rhinos, as well as tigers and great apes and certain timbers and marine life.

Although CITES mainly prohibits or regulates international trade, it has continued to expand its role in preventing illegal trade at the national level also through the adoption of various "Decisions" and "Resolutions". This is critical to ensure illegal trade at national levels does not lead to international trade dynamics that undermine the conservation of species and the effectiveness of the Convention itself. The approach to each species group differs, but all include national measures to control not only international, but also internal trade in the species' parts, derivatives and products[75].

CITES is financed primarily by its Parties whose contributions are paid into the CITES Trust Fund. In addition to the subscriptions of its Member States (all of them Parties), the European Commission has for long supported the Convention. Recently the EC has provided funding for an important number of activities, including a project for strengthening the CITES implementation capacity of developing countries for a total amount of EUR 2.5 million. Among other inputs, the EC also funds UNEP and the World Conservation Monitoring Centre to maintain CITES' Species Database.

In response to the ever escalating challenges of trade-related wildlife crime, CITES played a lead role in the formation of ICCWC which it now chairs.

Full details about the CITES Convention, its governance structure, *modus operandi* and Parties can be found on its website www.cites.org

3.2.3 INTERPOL

INTERPOL (the International Crime Police Organisation), which is a member of ICCWC, has an Environmental Security Sub-Directorate which runs an Environmental Crime Programme of global and regional operations to dismantle criminal networks behind environmental crime using intelligence-driven policing. The Programme is shaped by the Environmental Compliance and Enforcement Committee, which brings together executive leaders and decision makers from all 190 INTERPOL member countries to provide strategic advice on relevant issues and to harness global support. *The 1st Environmental Compliance and Enforcement Committee Meeting and Events* were held from 4 to 8 November 2013 in Nairobi, Kenya.

To support the Committee in its function, three Working Groups lead projects in three specific crime areas, Wildlife, Pollution and Fisheries. The *INTERPOL Wildlife Crime Working Group* brings together specialized criminal investigators from around the world to initiate and lead a number of projects to combat the poaching, trafficking, or possession of legally protected flora and fauna at an international level.

[75] Two examples: for rhinos, it is recommended that internal trade be "restricted" (Res Conf. 9.14 Rev. CoP15); for elephants, "unregulated domestic sale of ivory [is to] to be prohibited" under the Action Plan for the Control of Trade in Elephant Ivory (Dec 13.26 Rev. CoP15 Annex 2)

At a global level, INTERPOL has since 2012 been promoting the formation of National Environment Security Task Forces (NESTs) and has produced a procedures Manual on how to do so[76]. NESTs are designed to encourage multi-agency cooperation; the formation of intelligence analysis and investigation units dedicated to tackling wildlife crime; deployment of INTERPOL Investigative Support Teams to provide assistance in evidence collection and analysis for elephant poaching and ivory seizures; and increased use of INTERPOL's Notices system to enhance transnational law enforcement cooperation in combating ivory trafficking. The earliest NEST initiatives in Africa have involved Mozambique (2012), Senegal and Togo (both 2014).

In most countries of the world there is an INTERPOL National Central Bureau. The staff resident in these bureaux offer an immediate source of advice and direct assistance to the work of NESTs or any other wildlife enforcement network, as well as being able to call in support teams and other forms of back-up.

At a continental level, INTERPOL has led a number of operations to combat WLFC. As long ago as 2008, INTERPOL launched Project Wisdom to improve wildlife law enforcement in Africa, specifically targeting illegal trade in elephant ivory and rhinoceros horn. To date INTERPOL has coordinated at least seven operations targeting ivory and rhinoceros horn traffickers – Baba, Costa, Mogatle, Ahmed, Worthy, Wendi and Wildcat which collectively resulted in arrests, convictions and confiscations of ivory, rhino horn, other illegal wildlife products and firearms on a large scale.

The most recent operations of this type in Africa are:

- Operation Worthy (2012) – a centrally coordinated wildlife law enforcement operation by 14 member countries in Africa, targeting the illegal trade in elephant ivory and rhinoceros horn. Seizures included nearly two tons of contraband elephant ivory, more than 20 kg of rhinoceros horn, various other wildlife products, and more than 30 illegal firearms

- Operation Wendi (2013) combating the trafficking in elephant ivory in West and Central African countries. Nearly 4,000 ivory products and 50 elephant tusks were seized, along with 148 animal parts and derivatives and 88 firearms. Additionally, 222 live animals were released back into the wild

- Operation Wildcat (2014) Combating ivory trafficking and illegal logging across Southern and Eastern Africa, and supported by the Wildcat Foundation and the Norwegian Agency for Development Cooperation. Operation Wildcat resulted in the seizure of 240 kg of elephant ivory, 856 timber logs, 637 firearms, illicit drugs and 44 vehicles, and the arrest of 660 people

These operations have been carried out in collaboration with NGOs such as the International Fund for Animal Welfare (IFAW), with whom INTERPOL signed a Memorandum of Understanding (MoU) In May 2013, to partner in evidence-based wildlife crime investigations and enforcement operations, the first ever MoU signed by INTERPOL's Environmental Crime Programme with an NGO (see also 3.7.1.2).

On 7 October 2014, INTERPOL announced the formation of a dedicated environmental crime team in Africa to further support its member countries in the fight against illegal ivory trafficking and other environmental issues. Located within the INTERPOL Regional Bureau for East Africa in Nairobi, the environmental crime team will act as an extension of INTERPOL's Environmental Security Sub-Directorate located at its General Secretariat

[76] INTERPOL (2014) National Environmental Security Task Force: Bringing compliance and enforcement agencies together to maintain environmental security. Environmental Security Sub-Directorate, INTERPOL

headquarters in Lyon, France. As part of the Regional Bureau, the team will collaborate with national law enforcement agencies and INTERPOL National Central Bureaux (NCBs) in the region to increase information exchange, support intelligence analysis and assist national and regional investigations, with a particular focus on wildlife crime.

With the illicit trade in ivory and rhinoceros horn a major concern in East Africa, the team will work with countries and partner organizations to further the activities of INTERPOL's Project Wisdom (see above). This includes capacity building initiatives and creating a regional network for environmental protection. Very soon after its establishment the Team issued an international Red Notice for the arrest of Feisal Mohamed Ali, a Kenyan Asian wanted in connection with an ivory seizure in excess of two tonnes in Mombasa earlier in the year.

INTERPOL has been closely involved in two recently-published studies of wildlife trade and crime, one global and one focused on East Africa (see 3.3.1). These important reports highlight the need for increased intelligence analysis in order to provide sound evidence for multiple-count indictments where the trafficking is linked to fraud, tax evasion and money laundering.

3.2.4 UNODC

In addition to contributing to the efforts of ICCWC, UNODC plays an increasingly important role through delivery of specific technical assistance activities designed to strengthen the capacity of Member States to prevent, investigate, prosecute and adjudicate Wildlife and Forest Crime (WLFC). The UNODC Sustainable Livelihoods Unit is the focal point for this work which embraces capacity strengthening activities in South East Asia, South Asia, East and Southern Africa and Latin America, and includes promotion of ICCWC's *Wildlife and Forest Crime Analytic Toolkit* in these continents.

In May 2014 UNODC launched in its *'Global Programme for Combating Wildlife and Forest Crime*[77]*'*, a 4-year, $10-18 million programme to deliver assistance on a regional and national basis to support law enforcement responses, put in place appropriate legislation to address this crime, strengthen investigative, prosecutorial and judiciary capacities, as well as combat the related issues of money laundering and corruption. This Global Programme (GP) has seven sub-programmes:

1: Countering transnational organized crime and illicit drug trafficking
2: Prevention, treatment and reintegration and alternative development
3: Countering corruption
5: Justice
6: Research and trend analysis
7: Policy Support

The GP will complement or extend a number of crime-specific initiatives that UNODC is undertaking in Africa addressing piracy, illicit trafficking, money laundering and wildlife crime as part of its ongoing Regional Programmes in Eastern, Western and Southern Africa, and to that end will closely coordinate with its various Regional Offices to avoid any duplication on the ground, including the Transnational Organized Crime Units (TOCU) created through the West African Coast Initiative (WACI).

[77] For more detail about this programme visit http://www.unodc.org/unodc/en/wildlife-and-forest-crime/global-programme.html

UNODC has recently organised and supported a number of WLFC-related activities in Africa including:

- In September 2013, UNODC released a report entitled "*Transnational Organized Crime in Eastern Africa: A Threat Assessment*". The report highlights the most pressing transnational organized crime threats facing the EA region, including ivory trafficking.
- A *National Environmental Security Seminar* in Togo, held in Lomé, on 20 May 2014. The multilateral cooperation tools presented during the Seminar included the Wildlife and Forest Crime Analytic Toolkit, the UNODC/WCO Container Control Programme (CCP), the UNODC/Interpol Airport Communication Programme (AIRCOP) and the West Africa Coast Initiative (WACI).
- A workshop on '*Recovering the Proceeds from Wildlife and Timber Crimes – Asian & African experiences'*, hosted by the government of Botswana, in Gaborone from 3 – 5 June 2014
- In response to the request of the Government of the United Republic of Tanzania, UNODC undertook a UN Transnational Organised Crime (UNTOC) Gap Assessment in Tanzania and Zanzibar. As part of the assessment, UNODC reviewed wildlife and forest crime related legislation and law enforcement structures. The findings of the analysis were presented and discussed at the *UNTOC Gap Assessment Workshop* which took place from 16-18 June 2014 in Zanzibar.
- UNODC participated in a practical training on investigative techniques specific to wildlife and forest crime, held in Yaoundé, Cameroon, from 24-26 June 2014 and organized by COMIFAC in collaboration with TRAFFIC and WWF. Participants included representatives of Ministries, law enforcement officers and magistrates from six COMIFAC countries[78]. The training covered the use of informants, undercover agents, controlled deliveries, electronic surveillance, and strengthening cooperation between law enforcement practitioners. UNODC presented the ICCWC Wildlife and Forest Crime Analytical Toolkit, which is being implemented in Gabon and Angola.
- From 1-5 September 2014, UNODC conducted a joint field visit to Botswana with experts from TRACE Wildlife Forensics Network and the Netherlands Forensic Institute to carry out a coordinated assessment of wildlife DNA forensics.
- A workshop on '*Recovering the Proceeds from Wildlife and Forest Crimes'*, jointly with the Government of Tanzania and in partnership with the Bureau of International Narcotics and Law Enforcement Affairs, the Norwegian Agency for Development and Cooperation, and the British High Commission. The workshop was held From 8-12 September 2014, in Dar es Salaam, Tanzania.

As of October 2014, UNODC has a number of WLFC activities planned in several country and regional offices. For example, in East Africa, UNODC is designing a programme on strengthening the criminal justice approach to address the illegal trade in rhino and ivory horn. Activities will include training for law enforcement officials on crime investigation and forensics related to poaching, crime scene management, CITES listed wildlife and fauna, and controlled deliveries.

Further, through the UNODC-WCO Container Control Programme, Container Control Units in Mombasa, Kenya and Dar es Salaam, Tanzania, with a special focus on wildlife and timber trafficking will be established. A similar linkage will also be explored in building such assessments and considerations into the work of an Anti-Corruption Adviser based in South Africa, covering both Southern and Eastern Africa. This will help to strengthen inter-agency cooperation between national and local law enforcement agencies in the country and could also help improve the uniformity in which such cases are investigated in the region.

[78] Cameroon, Chad, Gabon, Central African Republic, Republic of Congo and Democratic Republic of Congo

Also notable is the November 2014 publication of "*Guidelines on methods and procedures for ivory sampling and laboratory analysis*" that UNODC has developed on behalf of ICCWC (see also 3.7.5.4).

3.2.5 World Bank

As a member of the consortium, the **World Bank** has contributed $1.8 million to ICCWC's operations. The December 2013 Expert Group Meeting on ivory forensics led by UNODC's Laboratory and Scientific Section is one component of a comprehensive ICCWC project "*Forensic analysis in support of law enforcement operations*", funded by the World Bank's Development Grant Facility.

The first component of the project covers the forensic analysis of ivory recovered during large ivory seizures to determine the origin of ivory with the aim to identify main poaching hot-spots in Africa. This work is carried out by Dr Samuel Wasser's laboratory at the University of Washington and supports CITES CoP 16 Decision asking countries to provide samples of large ivory seizures to forensic laboratories. The component serves as a pilot for the second component of the project which is the development of international Guidelines for forensic methods and procedures mentioned in 3.2.4 above. A third component will be to assess existing forensic facilities and capacity-building of existing laboratories, by engaging with relevant experts for the validation of forensic methods of ivory sampling.

The Bank is also implementing a medium-sized GEF project (18-month, US$3.8 million) entitled *Fighting against wildlife poaching and illegal trade in Africa.* Also it is preparing (presumably but not necessarily under the latter project), a major study of ivory trade economics with inputs from AfESG, CITES, MIKE and TRAFFIC. The EU together with the UK Government and the NGO Stop Ivory also participated in early talks regarding this initiative that were held to avoid duplication of effort[79].

3.2.6 WCO

The **World Customs Organisation (WCO)** joined ICCWC in 2011 and ever since has strived to enhance cooperation with other IGOs, as well as NGOs, that share its commitment to protecting wildlife from criminal syndicates and other illegal activities.

The *Green Customs Initiative* is another long-standing and ongoing cooperation programme that the WCO continues to support along with the CITES Secretariat. This initiative ensures that Customs and other border control officers are well-trained and have all the necessary tools at their disposal to fight wildlife and other environmental crimes.

Strengthening relations with the NGO sector is also on the WCO's agenda. In October 2013, the WCO formalized its cooperative relationship with TRAFFIC, the global wildlife trade monitoring network, by signing an MoU in which the two Parties agree to pool their capacity building efforts and enhance information exchange.

Located at borders, Customs administrations play a vital role in ensuring that all goods being declared for entry or exit are legitimate, while using a variety of enforcement techniques and their proven expertise to detect and intercept illegal wildlife, as well as other illicit goods. The WCO is very active in organizing global enforcement operations and in supporting regional operations targeting wildlife criminals with the support of its many partners, such as the CITES Secretariat which acknowledges that Customs is one of its key "enforcement arms".

[79] The EU was variously represented by Gael De-Rotalier; Helene Perier; and Helga Elisabeth Zeitler

One example of WCO success in this field is Project GAPIN, a capacity building project in Africa that focused on building the enforcement capabilities of frontline Customs officers to detect, intercept and seize illegal wildlife consignments, and on advocating a culture of integrity.

Another example is Operation COBRA II, supported by the WCO, which resulted in the seizure of 36 rhino horns, three metric tons of elephant ivory, 10,000 turtles, and 1,000 skins of protected species, and more than 100 metric tons of rosewood logs, dealing a huge blow to criminals involved in the highly lucrative trade in illegal wildlife.

WCO is currently developing a multi-year programme that is seeking to build the capacity of Customs officials in responding to wildlife crime that will incorporate a controlled delivery component (see 3.7.5.2).

3.2.7 TRAFFIC

TRAFFIC is an international NGO specialising in wildlife trade monitoring that works to ensure that the trade in wild plants and animals is not a threat to the conservation of nature. Originally established as a specialist group of the IUCN Species Survival Commission in 1976, soon after CITES came into force, TRAFFIC has developed since into a global, research-driven and action-oriented network, committed to delivering innovative and practical conservation solutions based on the latest trade information. Today TRAFFIC employs around 100 staff based in nearly 30 countries, and operates through a network of eight regional programmes, co-ordinated by the TRAFFIC International headquarters in Cambridge, UK.

TRAFFIC is governed by a Steering Committee composed of members of TRAFFIC's partner organizations, WWF and IUCN. A central aim of TRAFFIC's activities is to contribute to the wildlife trade-related priorities of these partners. TRAFFIC also works in close co-operation with CITES to which it is regularly asked to report.

TRAFFIC has recently been successful in securing a three-year, $1.5 million grant from the US Agency for International Development (USAID) to implement the '*Wildlife Trafficking, Response, Assessment, Priority Setting*' (Wildlife-TRAPS) initiative to tackle the illegal trade of terrestrial and marine wildlife between Africa and Asia. Wildlife TRAPS is likely to focus on achieving a high impact with a tightly focused group of species products (*i.e.* including ivory and rhino horn) traded between Central and East and Southern Africa, and East and South East Asia.

Full details about TRAFFIC can be found on its website www.traffic.org

3.3 INTERNATIONAL RESPONSE TO RECENT TRENDS

The range of recent responses to the illicit wildlife trade issue is huge, involving Governments, IGOs and NGOs. The selection of trade control initiatives and measures provided in the sections below indicates just how strong and wide the international community's immense concern and interest now is in the escalating scale and changing character of the illicit wildlife trade, particularly its new relevance to security and livelihoods in source countries.

For a fully comprehensive summary of all recent and anticipated high-level events and initiatives at global, regional and national levels (including those not directly relevant to Africa), see the list published by CITES in June 2014 and available here:
http://cites.org/sites/default/files/eng/news/pr/CITES_Jun_2014_illegal_wildlife_trade.pdf

3.3.1 Major reports

- Haken J (2011) *Transnational crime in the developing world*. Global Financial Integrity
- WWF/Dalberg (2012) *Fighting illicit wildlife trafficking: a consultation with Governments*. WWF International, Gland, Switzerland
- IFAW (2013) *Criminal Nature: the global security implications of the illegal wildlife trade*. International Fund for Animal Welfare
- UNEP, CITES, IUCN, TRAFFIC (2013) *Elephants in The Dust: The African Elephant Crisis*, A Rapid Response Assessment. UNEP, GRID-Arendal, www.grida.no
- UNODC (2013) *Transnational organised crime in Eastern Africa: a threat assessment*. UN Office for Drugs and Crime[80]
- WCO (2013) *Illicit Trade Report: 2012-July 2013*. World Customs Organisation
- INTERPOL (2014) *Elephant Poaching and Ivory Trafficking in East Africa: Assessment for an Effective Law Enforcement Response*
- UNEP and INTERPOL: Nellemann, C., Henriksen, R., Raxter, P., Ash, N., Mrema, E. [Eds] (2014) *The Environmental Crime Crisis: Threats to Sustainable Development from Illegal Exploitation and Trade in Wildlife and Forest Resources*. A Rapid Response Assessment. UNEP, GRID-Arendal, www.grida.no
- Vira, V., and T. Ewing (2014) *Ivory's Curse: The Militarization and Professionalization of Poaching in Africa.* Born Free USA and C4ADS
- Vira, V., and T. Ewing and J. Miller (2014) *Out of Africa: Mapping the global trade in illicit elephant ivory*. Born Free USA and C4ADS

3.3.2 Policy commitments

In the lead-up to CITES CoP16 held in March 2013 and subsequently, many relevant political commitments have been made, often at the highest political level, to increase efforts to combat wildlife crime more effectively, and often with a focus on the illegal ivory trade.

The list that follows is not all-inclusive, but some notable high-level policy commitments relevant to Africa include:

- In June 2012, the economic, social and environmental impact of illicit wildlife trafficking was recognised in para. 203 of *The Future We Want* emanating from the UN Conference on Sustainable Development (Rio+20) as an issue where firm and strengthened action needed to be taken
- In November 2012, then US Secretary of State Hillary Clinton said that illegal wildlife trade must be addressed at every level of the international community, and declared illegal wildlife trade a national security issue
- On 23 March 2013, an emergency meeting held in Yaoundé, Cameroon of Ministers of the Economic Community of Central African States in charge of defense and security, foreign relations and the protection of wildlife, adopted a *Declaration on the Fight against Poaching in Central Africa* and an anti-poaching plan of the highest urgency for the worst affected parts of Cameroon, Central African Republic and Chad (PEXULAB)[81]
- In April 2013, the UN Commission on Crime Prevention and Criminal Justice (CCPCJ) adopted at its 22nd Session a resolution on '*Crime prevention and criminal justice responses to illicit trafficking in protected*

[80] This follows an equivalent report for Central Africa in 2011
[81] Plan d'Extrême Urgence de Lutte Anti-Braconnage

species of wild fauna and flora'. This resolution was subsequently adopted by the United Nations Economic and Social Council (ECOSOC) as Resolution 2013/40 of 25 July 2013. It encourages States to treat illicit trafficking in wild fauna and flora as a serious crime when organized criminal groups are involved, and to fully utilize the UN Conventions against Transnational Organized Crime and Corruption to implement appropriate measures to prevent and combat illicit trafficking in wild fauna and flora. The UN General Assembly, in its Resolution 68/193 of 18 December 2013 on the '*Strengthening the United Nations crime prevention and criminal justice programme'*, reaffirmed ECOSOC's Resolution 2013/40. At its 23rd Session in May 2014, the CCPCJ adopted a further resolution on *'Strengthening a targeted crime prevention and criminal justice response to combat illicit trafficking in timber and forest products'*

- In a May 2013 report to the United Nations Security Council, UN Secretary General Ban Ki-moon highlighted the potential link between poaching and other transnational organized criminal activities, including terrorism
- In June 2013, the Royce Amendment to the US National Defence Authorisation Act was passed to provide authority for the US military to advise and assist host nation game and wildlife, law enforcement, and other appropriate agencies to suppress the illicit wildlife trade in Africa, this being a source of financing for transnational rebel and extremist groups
- In July 2013 President Obama issued an Executive Order on Combating Wildlife Trafficking to enhance coordination of US Government efforts to combat wildlife trafficking and assist foreign governments in building the capacity needed to combat wildlife trafficking and related organized crime
- The European Commission signed a *Cooperation Arrangement between the Directorate-General for the Environment of the EC and the State Forestry Administration of China on CITES-related measures* in July 2013. Cooperation in wildlife trafficking featured prominently in the high-level *China-EU Political Dialogue on Africa* held in Beijing on 28 October 2014
- In August 2013 the Legislative Assembly of the East African Community passed a Resolution urging partner states to take concerted action to end the massacre of elephants and trafficking of ivory
- In December 2013, Delegates from the 30 countries and 27 IGOs and NGOs participating in the African Elephant Summit in Gaborone dedicated themselves to providing political support at the highest level to ensure the implementation of 14 Urgent Measures to halt and reverse the trend in illegal killing of elephants and the illegal trade in ivory (see 1.3 and Annex 1)
- Also in December 2013, a "roundtable" on "*The fight against poaching and trafficking in endangered species"* was held on the side of the France-Africa Summit on Peace and Security in Africa held in Paris from 6 to 7 December. As a result, the ensuing "*Paris Declaration*" adopted by the 53 Government and IGO delegations attending (including the EU) incorporated a commitment to "*act promptly and decisively*" against poaching and smuggling of wildlife
- On 11 February 2014 the Obama Administration released a *National Strategy for Combating Wildlife Trafficking* which was developed by an interagency Presidential Task Force, representing agencies from across the federal government, and with significant input from an Advisory Council on Wildlife Trafficking. The Task Force was formed following the President's July 2013 Executive Order on Combating Wildlife Trafficking. Following release of this Strategy, the Secretary of the Interior announced that the U.S. Fish and Wildlife Service would implement a U.S. ban imposing new restrictions on the import, export, and commercial sale of elephant ivory within the United States, with some limited exceptions
- In February 2014, the EU together with 41 countries made a joint political commitment to bring the illegal wildlife trade to an end in the form of a formal Declaration issued at the end of the London Conference on the Illegal Wildlife Trade, 12-13 February 2014
- The Bonn Convention on Migratory Species passed a Resolution on "*Fighting of Wildlife Crime within and beyond Borders"* at its 11th Conference of the Parties held in Quito, Ecuador, 4-9 November 2014 (UNEP/CMS/COP11/CRP19)

3.3.3 Conferences and Meetings

- The Asian Development Bank organised in March 2013 an international symposium in Bangkok on *Combating Wildlife Crime: Securing Enforcement, Ensuring Justice and Upholding the Rule of Law*
- The African Development Bank together with WWF, issued in May 2013 *The Marrakech Declaration*, a ten point action plan to combat illicit wildlife trafficking
- UNEP hosted in November 2013 an "*Environmental Law Compliance and Enforcement Summit*". In the same week, meetings of INTERPOL's specialist working groups on wildlife were held. UNEP is also working to help strengthen the judicial components of enforcement.
- The European Commission recently set up an internal Inter-service Group on Wildlife Trafficking which held its first meeting in October 2013 in order to start work on a major EU position-paper or "Consultative Communication" on the subject[82]. This was followed on 10 April 2014 by an *Expert Conference on the EU Approach against Wildlife Trafficking*. The conference, attended by over 170 representatives from 27 EU Member States, enforcement and judicial networks, international organizations, civil society and non-EU source, transit and destination countries, discussed measures and actions to be taken by the EU domestically and internationally to strengthen its approach against wildlife trafficking. A number of recommendations were forthcoming[83]
- The United for Wildlife (UfW) partnership between international conservation organisations and the Royal Foundation of Princes William and Harry and the Duchess of Cambridge convened a conference of 250 delegates from 30 countries at the Zoological Society of London on 11-12 February 2014 to seek solutions to the international wildlife trade crisis
- The UK Government, building on a preliminary conference hosted by HRH Prince Charles in May 2013, hosted the high-level *London Conference on Illegal Wildlife Trade,* 12-13 February 2014, resulting in a formal Declaration for action by participants (see 3.3.2 above): the Government of Botswana has offered to host a follow-on conference in 2015 to review progress in its implementation.
- The Expert Group Meeting on Guidelines for forensic methods and procedures of ivory sampling and analysis was organized by UNODC, under the umbrella of the International Consortium on Combating Wildlife Crime (ICCWC) in Vienna, 4 – 6 December 2013. Subsequently the Guidelines were published in November 2014.
- The Tokyo Conference on combating wildlife crime took place on 3 to 5 March 2014, hosted by UN University in Tokyo, Japan, as an event for the first World Wildlife Day. The conference included a workshop on the Wildlife Enforcement Monitoring System (WEMS) database
- On 27 June 2014 the United Nations Environment Assembly of UNEP, adopted a Resolution on the illegal trade in wildlife, in which the UNEA calls on the General Assembly to consider the issue of illegal wildlife trade. Since then the *UN Group of Friends on Poaching and Illicit Wildlife Trafficking* has complied a Draft UNGA Resolution on illicit wildlife trafficking which was discussed by invited experts at a Group meeting in New York on 7 November 2014.

[82] European Commission (2013) *Consultative Communication on the EU Approach against Wildlife Trafficking*. Communication from the Commission to the Council and the European Parliament
[83] A summary of the outcome can be found at http://ec.europa.eu/environment/cites/traf_conf_en.htm

3.3.4 Programmatic and funding commitments

A separate list of funds and programmes focused on conservation of the elephant, and which also address the massive challenges posed by trade in its ivory, is given in section 1.4.2.

- The African Wildlife Foundation published in January 2014 a request for proposals to develop and implement an "omni-channel, pan-African anti-poaching and wildlife trafficking" awareness campaign. It has established also a *Species Protection Grant Fund,* focusing mainly on iconic species groups, but also offering non-specific support to law enforcement and demand reduction measures. AWF's African Voices campaign is addressing demand in Africa by educating and involving Africans
- The European Union has actively contributed to the fight against illegal wildlife trade, both domestically and globally, for many years through a wide range of measures. Beyond steps to combat wildlife trafficking within its own territories, the EU has also been leading efforts internationally and bilaterally to enforce rules against illegal wildlife trade and to support biodiversity protection in general. These efforts are being undermined by the current poaching crisis. Regarding the regulation of international wildlife trade, the EU has focused on CITES; the EU Forest Law Enforcement Governance and Trade (FLEGT) Action Plan[84]; EU policies against illegal, unreported and unregulated (IUU) fishing; and TWIX (Trade in Wildlife Information eXchange), a centralised database in seizures and offences within the EU. The effectiveness of these instruments naturally depends very much on the level of enforcement and cooperation by countries of origin.
- The Global Environment Facility. In its next iteration, GEF6 (2014-2018), there is a new and important component for wildlife trade related activities. At the same time conservation NGOs, such as WWF, are admitted as implementing partners which should enhance the GEF's conservation impact significantly. During its last meeting in May 2014, the GEF council approved a project entitled "*Engaging Policy Makers and the Judiciary to Address Poaching and Illegal Wildlife Trade in Africa*" with the purpose of creating the enabling environment to effectively address poaching and illegal wildlife trade through new and enhanced laws, regulations, and policies
- The German Government is one of the biggest supporters of wildlife conservation in Africa. The Federal Ministry for Economic Cooperation and Development (BMZ) commissioned in 2013 a 2-year, EUR 3.2m, *Inter-sectoral Technical Cooperation Project for Combating Poaching and Wildlife Trade in Africa and Asia* to support international efforts and partner countries along the entire illegal wildlife trade chain. Germany supports also law enforcement work at the Protected Area level
- The UK Government's Department for Environment, Food and Rural Affairs leads a Partnership for Action against Wildlife Crime (PAW). Not only may this offer a useful model to other countries, but publications under this initiative may also be useful to others[85]
- The US Government recently has demonstrated its commitment to combating wildlife trafficking, related corruption, and money laundering in numerous ways. Along with the National Strategy for Combating Wildlife Trafficking mentioned above it was announced that the US would provide an additional $10 million in regional and bilateral training and technical assistance in Africa to combat wildlife trafficking. This included approximately $3 million in bilateral assistance to South Africa, $3 million in bilateral assistance to Kenya, and $4 million in regional assistance throughout sub-Saharan Africa. The Transnational Organized Crime Rewards Program, which was signed into law on January 2013,

[84] This Plan introduced an innovative supply-demand approach aiming to ensure that timber and timber products placed on the EU market are of legal origin

[85] For example, DEFRA (2012) *Wildlife Crime: a guide to the use of forensic and specialist techniques in the investigation of wildlife crime.* Department for Environment, Food and Rural Affairs, UK

enables the Secretary of State to offer rewards up for information leading to the arrest, conviction, or identification of significant members of transnational criminal organizations who operate primarily outside the United States. The law also allows for rewards for information that dismantles such organizations or leads to the disruption of their financial mechanisms

- The US Agency for International Development is expected to launch a new wildlife technology challenge, which will promote the use of innovative technologies like mobile phone applications and wildlife DNA analysis techniques to assist in combating wildlife trafficking. USAID also supports the TRAFFIC/TRAPS project mentioned above.
- The US Fish and Wildlife Service supports the International Law Enforcement Academy in Gaborone, Botswana, which has trained 350 law enforcement officers in wildlife crime investigations since 2002. In 2013 the USFWS pledged an additional $2 million annually in support of its *Wildlife Without Borders* capacity building program, which includes wildlife law enforcement training.
- WCS: as an adjunct to its involvement in the Clinton Global Iinitiative (see 1.4.2), WCS launched at the same time a campaign called "*96 Elephants*", named for the estimated number of elephants being gunned down each day by poachers. The campaign addresses the fact that the US is the world's second largest importer of ivory, and focuses on securing effective moratoriums on domestic ivory sales. The campaign has achieved this already in New York and New Jersey, and the USFWS is developing a Federal ivory marketing ban (see 3.3.2). Other countries are being called on to do likewise
- WWF's *Wildlife Crime Scorecard* is a good example of a reporting initiative to make demand and source countries accountable for their work and efforts. This report measures progress towards compliance with and enforcement of CITES commitments for the three species groups (elephants, rhinos and tigers) and aims to acknowledge those countries where illegal trade is actively being countered in contrast with those where the current efforts are entirely inadequate[86]

3.4 STRATEGIC OPTIONS FOR COMBATING ILLICIT TRADE

National wildlife law enforcement agencies, especially those in sub-saharan Africa, face many challenges when it comes to combating the illicit wildlife trade. These include: inadequate legislation; lack of equipment; limited training opportunities; difficulty accessing modern enforcement tools like intelligence-gathering and analysis and forensic science support; poor governance; and a limited appreciation among prosecutors and the judiciary of the seriousness of wildlife crime. Special investigative techniques and powerful tools, such as 'follow the money' and 'controlled deliveries', are not mobilised to go after criminal organizations engaging in wildlife crime. Wildlife law enforcement officers often lack parity with their counterparts in customs and police services, and are ill-prepared to respond to the organized nature of those who seek to steal natural resources.

Very many of the reports, events and initiatives detailed above have generated strategies and action plans for dealing with these and other problems related to the illegal wildlife trade as a matter of great international concern and urgency. All of the reports listed in 3.3.1 above include action plans or specific recommendations on how to tackle the issue, as do the current multi-annual and species-specific strategies of numerous IGOs and NGOs, to which can be added the action agendas incorporated in Declarations such as Marrakech, Gaborone and London for example.

[86] Nowell K (2012) *Wildlife Crime Scorecard: Assessing Compliance with and Enforcement of CITES Commitments for Tigers, Rhinos and Elephants*. WWF International, Gland, Switzerland.

Not surprisingly there is considerable overlap between them, with many of the same points arising repeatedly, if in slightly different language or with different emphasis. There is also a general recognition that the overall goal has to be addressed through at least four distinct strategic approaches none of which is sufficient in itself, meaning that the grand strategy must be to pursue all of them simultaneously at international, regional and national levels. They are:

- Strengthening policies and laws
- Stopping the killing
- Stopping the trafficking
- Stopping the demand

In the four sections that follow (3.5-3.8) an attempt has been made to collate, for each of these approaches, the main points around which a significant degree of consensus is evident

Because of their relevance to this particular study, due attention has been paid to the recommendations arising from the EU's recent *Expert Conference on the EU Approach against Wildlife Trafficking*.

3.5 STRATEGY 1: STRENGTHENING POLICIES AND LAWS

To curb the illegal wildlife trade it is important to ensure that the criminals involved, in particular those 'kingpins' who control the trade, are prosecuted and penalised so as to provide an effective deterrent. To this end, the following policy and legal reforms should be adopted where necessary.

3.5.1 Enact poaching and wildlife trafficking as "serious crimes"

Legislation should be adopted (or amended) to criminalise poaching and wildlife trafficking by ensuring that domestic offences involving wildlife trafficking fall within the definition of "serious crime" in Article 2 of the UN Convention against Transnational Organized Crime (UNTOC), to which all States should become Party. This would establish a minimum sentence of 4 years for offences relating to poaching and illicit trafficking: UNTOC is anyway a valuable tool that can serve as the basis of international cooperation, including extradition mutual legal assistance and asset recovery

3.5.2 Adopt a zero tolerance policy on corruption

The serious problem of corruption must be addressed as an important factor facilitating poaching, wildlife trafficking, and related offences by adopting (or amending) policies and legislation that criminalise corruption and bribery, and by instituting measures to detect and punish offenders especially in the WLFC sector. All governments should become parties to, and implement, the UN Convention against Corruption, which can be a valuable tool to prevent corruption and foster international cooperation in corruption cases.

3.5.3 Ensure the judiciary imposes effective deterrent penalties

The ability to achieve successful prosecutions and deterrent sanctions must be strengthened by raising awareness in the judicial sector about the seriousness, impact and potential profits of WLFC, and by working with prosecutors and judges to ensure that penalties handed down are commensurate with legal provisions for "serious crime" and so act as effective deterrents. Dedicated training and increased capacity building are essential tools to achieve this goal, which can be delivered as part of support to national WENs.

Kenya, for example, has not only revised its wildlife law inclusive of new heavy penalties, but also the Director of Public Prosecutions has strengthened prosecutions through a new specialised Wildlife Crime Unit comprising 35 prosecutors, and the Chief Justice through the Judiciary Training Institute has initiated national dialogue meetings on wildlife crime, and training courses for the judiciary and prosecutors on the new legislation.

3.5.4 Expand the agenda of National Security Committees

Poaching and the illegal trade in wildlife, especially ivory and rhino horn, should be introduced as a standing agenda item of **National Security Committees** (or their equivalent) in countries where proceeds from these criminal activities are known or are likely to be used to fuel internal conflict, armed rebellion or external aggression. The head of the national wildlife agency should be a member of the National Security Committee (or its equivalent) in these countries. This recommendation is consistent with AES Urgent Measure 4 (see Annex 1 in Section 1).

3.6 STRATEGY 2: STOPPING THE KILLING

This component of overall strategy is targeted mostly at building and/or supplementing the capacity of those responsible for providing *in situ* protection to wildlife at the primary source level in the field, namely national wildlife and PA authorities as well as managers of community and private PAs. The various ways in which this can and is being done in the different regions is discussed in Volumes 2-5, while the principal measures available to support this strategy are summarised below.

Improvements in anti-poaching are essential to complement transit disruption and demand reduction efforts further up the supply chain, but they cannot succeed if they are focused on tactics at the expense of community outreach and intelligence-led policing.

3.6.1 Strengthen protection forces

The poaching pressures of the last few years have found all wildlife protection agencies throughout Africa wanting in terms of adequate manpower to confront and contain the threat. As described in the regional volumes, most national authorities are adding significant numbers to the strength of ranger forces in both the short and longer term. They are also creating and deploying elite strike forces that are highly mobile and capable of rapid response operations, as well as specialised PA-based intelligence-*cum*-community relations units. At the same time, the efficacy of all these personnel is being enhanced by improving their equipment, training and welfare.

The need to engage in intelligence-led operations and create, even at the PA level, intelligence analysis and investigation Units dedicated to tackling wildlife crime is now widely acknowledged. Simply building up ranger forces to react to poaching may increase the rate of local arrests, but it will not eliminate poaching. Organized poaching networks can easily expend hunters at the bottom of the chain, while middlemen can quickly bid up the supply of poachers by increasing profit distributions. Law enforcement strategies should focus on mapping out local poaching networks to identify the most vulnerable points, enlisting the services of local informants to the extent possible.

Few protection agencies find it possible to meet all of the various needs involved, and so rely heavily on donors to maximise the efficiency and effectiveness of their manpower.

3.6.1.1 Equipment

Equipment needs include the following categories: personal (uniforms, boots, capes, body armour); camping (tents, torches etc.); navigation (GPS, maps); surveillance (binoculars, night-vision scopes, drones); communications (radios, phones); crime scene (cameras, sampling containers, handcuffs); weapons and ammunition; tracker dogs.

While primary protection duties rely heavily on foot patrols, the insertion and extraction of rapid response teams in particular requires transport ranging from helicopters and aircraft to 4WD vehicles and motorcycles. The helicopters and aircraft are also needed both for routine surveillance and for the guidance of certain ground operations. Adequate funds to meet maintenance and running costs obviously are essential.

Other specialised equipment needed to protect particularly sensitive boundaries includes various types of wall and fence (including electric), as well as fence-break and other intruder-detection systems, such as intrusion detection cables for key hot spots along borders.

Whilst not normally thought of as “equipment”, increased manpower in the field requires an equivalent increase in the staff housing available.

3.6.1.2 Training

Many countries run training courses for rangers and wardens at national facilities. Where these are not available, training can be and often is provided through IGO and NGO funded projects. Skill and competence levels vary, but efforts are being made to standardise basic law-enforcement strategy to which the few existing regional wildlife colleges can contribute.

All training facilities, whether national or regional, need to update their law-enforcement course content in particular to take in the CSI, forensic, adaptive monitoring and intelligence-led techniques that are now needed to help defeat the contemporary poaching challenge. A specific proposal for EU support to course development at the College of African Wildlife Management is presented in Volume 3, section 5.4.1.

3.6.1.3 Staff welfare

Rangers in the front-line of anti-poaching duty are at risk of injury or death: increasing numbers have lost their lives during the current crisis. Compensation schemes for bereaved families are required, plus memorial plaques and monuments to give public recognition to their sacrifice. Similarly, rangers resident in the field must have decent housing, and all law enforcement personnel must be paid a realistic and incentive working wage, as well as hardship and danger allowances as appropriate.

Lack of attention to basic welfare issues such as these is a significant de-motivator, and is what pre-disposes staff to corruption and makes them vulnerable to approaches from poachers and middle-men to aid and abet them.

3.6.2 Best practice

Starting in mid-2014, the Frankfurt Zoological Society (FZS) carried out with German "polifonds" support, a 6-month review aimed at developing standardised guidance for anti-poaching law-enforcement interventions in Africa, with an emphasis on identifying best practices and helping strengthen efforts to combat wildlife crime and the trafficking of wildlife products at both local site and national levels. The study built on existing literature and past studies, including: the International Consortium on Combating Wildlife Crime (ICCWC) Toolkit, existing CITES National Ivory Action Plans prepared by several African countries, and a number of recent reports on wildlife legislation and prosecution procedures and success factors in a number African countries[87].

An analytical framework was developed as the basis for the assessment of law enforcement approaches based on an online survey completed by over 100 professionals directly involved in implementing law enforcement activities in Africa. The framework identifies three 'pillars' at the site level and three 'pillars' at the national level that form critical components of effective wildlife law enforcement. These pillars are, at the site level: 1) law enforcement patrols; 2) law enforcement management; and 3) intelligence and investigations; and at the national level: 1) national intelligence and investigations; 2) legislation and prosecutions; and 3) inter-agency collaboration. In addition to the information from existing literature and the online survey, the assessment included site and country visits with the aim of elucidating best practices under each of these six pillars.

Sites were visited across Southern, Eastern, and Central Africa, and consultations were also held with law enforcement officers at the national level in a number of countries, including Kenya, Mozambique, South Africa, Botswana, Namibia, Zimbabwe, Zambia, Gabon and Togo. Survey inputs were obtained from people working in a large number of other countries as well e.g. Congo, DRC, Tanzania and Ethiopia.

The resulting assessment sets out key components for each of the six pillars that have worked well and have the potential to inform best practice across the continent. As such, the assessment provides detailed guidance for law enforcement personnel working at all stages of the chain in wildlife law enforcement, and clarifies areas that law enforcement practitioners see as a priority for additional support and funding.

The study's law enforcement framework and preliminary findings have already informed the development of a set of 'benchmarks' for assessing protected area law enforcement capacity and for identifying support needs under the new EU-funded CITES Minimising the Illegal Killing of Elephants and other Endangered Species (MIKES) Project (see Box 6), as well as being used as the basis for the development of National Ivory Action Plans by the further nine countries of "secondary concern" in relation to the illegal trade in ivory in Africa[88] (see also 1.3), as well as several countries in Asia.

[87] Similar recent review studies have been undertaken also by WWF, the International Ranger Federation and the South African Wildlife College
[88] Cameroon, the Congo, the Democratic Republic of the Congo, Egypt, Ethiopia, Gabon, Mozambique and Nigeria, plus Angola

Box 6. The MIKES Law Enforcement Capacity Assessment Benchmarks

The MIKES Law Enforcement (LE) Capacity Assessment has been developed as part of the new CITES Minimising the Illegal Killing of Elephants and other Endangered Species (MIKES) Project (see also 1.4.3.1). An important component of the new MIKES project is the establishment of a set of "**law enforcement capacity benchmarks**" designed to help participating range States and sites to better understand the status of their wildlife law enforcement efforts, pinpoint key areas where investments and projects could potentially be targeted, and monitor progress in strengthening wildlife law enforcement capacity. The *MIKES National-level LE Capacity Assessment* is designed to be undertaken as a self-assessment by staff working in the national wildlife management agency. Similarly, the *MIKES Site-level LE Capacity Assessment* is designed to be undertaken as a self-assessment by staff working at the participating MIKE site and/or at headquarters. Each Assessment is organized around three law enforcement pillars, with a set of benchmarks designed to measure law enforcement capacity under each pillar.

Having already demonstrated their utility, these relatively easy to apply "benchmarks" may also contribute directly to the development of the "ICCWC Toolkit Light" mentioned in section 3.7.3.1. This and other possible activities to operationalise the forthcoming FZS Best Practices Guide were due for discussion at a workshop scheduled for late 2014/early 2015, to which German Government and EU officials would be invited in order to consider supporting a possible follow-up programme.

3.6.3 Monitor law enforcement performance and effectiveness

The monitoring of law enforcement and anti-poaching efforts in many protected areas remains costly, unsystematic and unstandardised; transparency is lacking and there is little guidance available to managers on how to improve current management practices.

In order to address this, a global consortium of NGOs and conservation agencies (WCS, WWF, ZSL, FZS, CITES-MIKE and North Carolina Zoo) have developed the Spatial Monitoring and Reporting Tool (SMART; www.smartconservationtools.org). SMART is an easy-to-use software tool for tracking where park rangers go, what they see, what they do, and which makes this information transparently available to the guards themselves, their site-based managers, the national headquarters, donors and so on.

At the local level, SMART can support anti-poaching by enabling identification of poaching hotspots, evaluation of ranger performance, and inform adaptive management for more efficient targeting of enforcement efforts; at the national level, the information can strengthen institutional communication channels to better allocate financial and human resources to improve anti-poaching efforts; and globally, the information provides standardised, reliable, and accountable measures of poaching and performance to prioritize funding streams and encourage better governance.

SMART is being implemented in more than 100 protected areas worldwide through technical support provided by SMART partners in collaboration with host government agencies. In Africa SMART is being used in protected areas in 14 countries[89], with national-level adoption of the system already secured in Gabon and underway in Uganda, Kenya, and Democratic Republic of Congo. The SMART Partnership is also engaged with several global institutions and conventions in joint efforts, such as CITES-MIKE and the World Heritage Centre.

[89] Cameroon, Congo, Democratic Republic of Congo, Gabon, Kenya, Liberia, Madagascar, Malawi, Mozambique, Nigeria, Sierra Leone, Tanzania, Uganda, Zimbabwe

Through these and other multi-lateral and international mechanisms, SMART has the potential to become the global standard for improved law enforcement monitoring across protected areas. Although the current system is not without its critics, improvements are expected and assistance with the adoption of SMART should certainly qualify as an eligible activity for funding within EU support packages for Key Landscapes for Conservation.

3.6.4 Form Public Private Security Partnerships

In countries where the capacity of the responsible public institutions is far below that required to provide meaningful wildlife management and protection, and there is little if any prospect of Government being able to rectify the situation even in the mid to long term, then the contracting out of these functions to private entities, usually on a PA-specific basis, can provide an effective solution. To date, Central Africa has the longest standing experience with this "Conservation Security Partnership" approach, as detailed in Volume 4, section 4.4.

The African Parks Network is an NGO that provides such services exclusively, and currently has management contracts In 7 Parks in 6 countries[90]. Other NGOs have also taken this approach, notably WCS which is providing robust partnerships in law enforcement in the Nouabalé-Ndoki NP (Republic of Congo), as well as several Parks in South Sudan, and expects also to conclude similar arrangements in the near future for the Reserve de Faune Okapi in the Democratic Republic of Congo.

3.6.5 Promote community development

Just as welfare issues can explain the corruption of law-enforcement personnel, poverty goes a long way in explaining the willingness of local people living with wildlife and near PAs to break the law and kill animals whether for their own consumption or at the behest of middle-men in the illegal wildlife trade. It follows that efforts to improve and diversify the livelihoods of communities living with wildlife, particularly those neighbouring PAs, must feature in any strategy to "stop the killing". Such efforts should go hand-in-hand with awareness and education programmes.

There is a need to increase capacity of local communities to pursue sustainable livelihood opportunities and eradicate poverty. This includes promoting innovative collaborative partnerships for the conservation and sustainable management of wildlife (including actions to reduce illegal use of fauna and flora) such as community conservancies, public-private partnerships, sustainable tourism, revenue-sharing agreements and other income sources such as sustainable agriculture.

A successful example of the latter is the Community Markets for Conservation (COMACO) project in Zambia's Luangwa Valley, which through a farmer's cooperative has helped former poachers and subsistence farmers turn their efforts to new trades that are both more profitable and more environmentally friendly.

3.7 STRATEGY 3: STOPPING THE TRAFFICKING

Of the four main strategies for combating the illicit trade in wildlife, that for stopping the trafficking is both the most complex and the least developed. As such the Government agencies primarily involved are in considerable need of financial and technical support from IGOs and NGOs.

[90] Akagera (Rwanda); Bangweulu and Liuwa Plains (Zambia); Garamba (DRC); Majete (Malawi); Odzala (Congo); Zakouma (Chad)

Given the nature of the value chain from source to consumer, attempts to apprehend all those involved and disrupt the trade depend on effective action by many different enforcement agencies. This could be thought of as a parallel "enforcement chain" which, like any chain, will only be as strong as its weakest link. It follows that the procedures and competencies of all the law enforcement services involved should be aligned to ensure there is no weak link, including: wildlife, forests, fisheries, police, customs, immigration, security, intelligence and judiciary. Until recently these various agencies tended to operate independently, one often undermining the work of another.

Consequently, much attention is rightly now being paid to encourage the creation of functional inter-agency coordination bodies to ensure they collaborate and function in a mutually supportive manner. Although names vary depending on level, these are generally referred to as Wildlife Enforcement Networks (WENs), and a lot of thought has recently gone into the methods and other mechanisms available to make such networks, and/or the individual agencies being coordinated, more effective. Many of these tools and techniques have been adapted from agencies combating other forms of illicit trade, such as drugs, arms and people.

A brief overview of the principal measures available to support an anti-trafficking strategy is given below.

3.7.1 Promote international coordination in wildlife law enforcement

One of the most important developments in recent years to advance international coordination in enforcing wildlife trade laws is the formation in 2011 of ICCWC (see 3.2.1). Much of what is described below can be traced back to the influence of this consortium (and at regional and national levels also).

3.7.1.1 Intercontinental initiatives

The USA is a strong champion of the WEN approach and is working with ICCWC and other interested partners to support the creation of a global network of regional and national Wildlife Enforcement Networks to improve communication and strengthen response actions across enforcement agencies globally. In March 2013 the ICCWC convened in Bangkok, with US funding, the *First Global Meeting of the Wildlife Enforcement Networks*, which brought together 131 participants from around the world, enabled wildlife law enforcement officers and WEN representatives to share their experiences at combating wildlife crime, and to discuss ways of further enhancing cooperation to respond to the serious threat posed by transnational organized groups involved in wildlife crime. All existing networks – including those that have been recently established and those under consideration - participated in the event, as well as a number of interested countries, intergovernmental organizations and civil society organizations.

During the meeting participants reaffirmed the need to work together and suggested increased interaction amongst WENs to form a 'network of the wildlife enforcement networks', which could promote communication and cooperation links amongst them at regional, continental and global levels.

As a precursor to this event, a month long pilot exercise in such inter-continental cooperation was carried out in January 2013 with US support. Known as *Operation Cobra* this involved police, customs and wildlife officers in 22 Asian and African countries, and resulted in a large number of arrests and seizures. Exactly a year later *Operation Cobra II* had similar success, involving 28 countries and resulting in more than 400 arrests and 350 major seizures across Africa and Asia including 36 rhino horns and over three metric tons of elephant ivory. Police, Customs, and wildlife officials from China, Africa, Southeast and South Asia, as well as the United States, joined together with CITES, WCO, INTERPOL, ASEAN-WEN and LATF to stage the operation out of coordination centres in Nairobi and Bangkok, with links to field operatives across Africa and Asia.

The "International Coordination Team" for Cobra II exchanged real time intelligence on a daily basis, targeting poachers and traffickers of endangered species.

3.7.1.2 NGO involvement

The International Fund for Animal Welfare (IFAW) and INTERPOL signed a Memorandum of Understanding (MoU) In May 2013, to partner in evidence-based wildlife crime investigations and enforcement operations, the first ever MoU signed by INTERPOL's Environmental Crime Programme with an NGO. To date the two organisations have coordinated three multi-agency operations in all regions of Africa each lasting several months, namely *Operation Wendi* in 2012, *Operation Worthy* in 2013 and *Operation Wildcat* in 2014. IFAW and another NGO, the Freeland Foundation, were closely involved also with the two Africa/Asia *Cobra* operations mentioned above.

3.7.2 Facilitate interagency networking within Africa

3.7.2.1 Inter-regional initiatives: The Lusaka Agreement and Task Force

The Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (The Lusaka Agreement) traces its origins to a meeting of wildlife law enforcement officers from eight Eastern and Southern African countries in Lusaka, Zambia in December 1992. This led to formal inter-governmental negotiations under the auspices of UNEP, with the final Agreement eventually coming into force in December 1996.

Currently, there are seven Parties to the Agreement: The Republics of Congo (Brazzaville), Kenya, Liberia, Tanzania, Uganda, Zambia and the Kingdom of Lesotho. The Republics of South Africa, Ethiopia and the Kingdom of Swaziland are signatories. The Agreement provides for a Governing Council, National Bureaux and a permanent Task Force to implement its objectives of reducing and ultimately eliminating illegal trade in wild fauna and flora in Africa.

The Lusaka Agreement Task Force (LATF) was established in June 1999 with headquarters in Nairobi, Kenya. It comprises seconded law enforcement officers from Party States and locally recruited support staff, and its mission is to work with the National Bureaux in order to:

- facilitate cooperative activities in undertaking law enforcement operations
- investigate violations of national wildlife laws
- disseminate and exchange of information on illegal trade activities, and
- build capacity for awareness promotion

Essentially these correspond to WEN functions, so the idea of a WEN for Africa is not new. However the LATF prototype has not been an unqualified success when the return on 15 years' heavy investment is assessed in terms of impact. It has been the subject of considerable criticism, and the almost random assemblage of countries involved does not fit well with any of the regional political groupings that have emerged since, and for which the formation of new WENs is now under active consideration (see below).

Consequently the continued relevance of the LATF is uncertain, which is causing tension and distracting from the priority actions that need to be undertaken in Africa. It would be in the interests of all parties therefore, if a review of LATF was commissioned, possibly by the EU in order to inform further funding and advocacy avenues if any.

3.7.2.2 Regional initiatives: emerging WENs

USAID has invested $17 million since 2005 towards establishing regional WENs, of which that for the Association of South East Asian Nations is a notable example (ASEAN-WEN). Following such models, the US initiated the development of a Central African WEN in November 2011, with a workshop in Douala under the auspices of the Commission of Central African Forests (COMIFAC). The meeting brought together representatives from COMIFAC member countries[91] and produced a *Regional Action Plan for Strengthening National Wildlife Law Implementation* for the period 2012–2017 which would form the basis for a wildlife enforcement network in Central Africa, similar to those operational or under development in Central America, Europe, South and South-East Asia.

This was followed up by another US funded workshop in Libreville in April 2012. The Regional Workshop on *Wildlife Trafficking and Dismantling Transnational Illicit Networks* brought together the same Central African countries as in Douala. Approximately 150 law enforcement and conservation government officials as well as representatives from NGOs and IGOs held three days of productive and practical dialogue in support of building a regional wildlife enforcement network (WEN) to combat wildlife trafficking. A draft resolution was proposed at the workshop with recommendations that were formulated by the Central Africans to support establishing and implementing a Central African WEN.

The US is now initiating support for the creation of yet more networks in Asia, South America and Africa. In October 2013 it facilitated a *Southern Africa Regional Wildlife Trafficking Workshop* in Gaborone. Officials of wildlife enforcement authorities from Angola, Botswana, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe resolved, but in principle only, to recommend the establishment of a network of national wildlife law enforcement agencies to be known as the Wildlife Enforcement Network for Southern Africa (WENSA).

Another new African WEN is being promoted under a comprehensive programme entitled ARREST, standing for "*Africa's Regional Response to Endangered Species Trafficking*", based on a concept jointly developed by AWF, the Freeland Foundation and IFAW. These organisations have prepared with US help a proposal that seeks funding for the recent initiative of eight African governments to create a new Horn of Africa Wildlife Enforcement Network (HAWEN). HAWEN member countries currently consist of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan, and Uganda.

These are the member states of the Intergovernmental Authority on Development (IGAD) which has already committed to providing office space for the HAWEN Secretariat in its Djibouti headquarters. While possible in principle, it is not clear whether and how in practice the three countries already involved in the LATF (see above) will be able to sustain membership in two WENs simultaneously[92].

The ARREST model is designed to be a holistic continent-wide program that increases capacity and communication channels between the Horn of Africa with other parts of Africa and the rest of the world. The ARREST partnership is already engaging other regions of Africa and expects these to benefit from the initial action in the Horn of Africa, which is intended to serve as a pilot that will inspire development of similar WENs as has been mooted already for Southern Africa.

[91] Burundi, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo, Equatorial Guinea and Gabon
[92] Ethiopia, Kenya and Uganda

As presented in the ARREST proposal, these WENs will serve as facilities to build the enforcement capacities of member states - at the national level - for protection of key populations, wildlife crime investigation and evidence collection, the use of legal tools and prosecutorial procedures, and identification of species targeted for illegal trade. As such their principal focus will be on the delivery of a variety of training courses including:

- Protected area operational and tactical enforcement conservation training (PROTECT)
- Detection of environmental crime training (DETECT)
- Legal training for prosecutors and the judiciary
- Species ID training
- Care for confiscated wildlife training

An important element of regional networking is to develop agreements to facilitate cross-border cooperation so pursue, arrest and extradite poachers and illegal traders. Ideally such measures should be mandated in formal regional Protocols.

3.7.3 Form national interagency coordination bodies

3.7.3.1 NESTs, NCUs and WENs

Recent trends in the wildlife trade, particularly those involving ivory and rhino horn, have not only attracted widespread international attention, but have also galvanised responses at the national level. Most often these have been focused on trying to prevent commodities entering the value chain in the first place, through anti-poaching efforts to stop the killing. More and more countries however, have realised they need to tackle the rest of the chain within their territories and even beyond.

To that end they have been setting up multi-agency Task Forces, Committees, Groups and Units which equate to WENs at the national level, such as the NESTs (National Environment Security Task Forces) promoted by INTERPOL (see 3.2.3), and the NCUs (National Coordinating Units) of Central Africa mentioned in Volume 4, section 5.5. Two specific examples from a supply and consumer country respectively are South Africa's *National Wildlife Crime Reaction Unit*, and China's *National Interagency CITES Enforcement Collaborative Group*. Membership varies, but should encompass all natural resource management agencies[93], as well as police, customs, intelligence, prosecutors, the judiciary and so on.

A highly relevant product in this context is ICCWC's ***Wildlife and Forest Crime Analytic Toolkit***, which is designed to assist government officials in forestry and wildlife administration, customs and all other relevant enforcement agencies in conducting a comprehensive review and analysis of possible means and measures to protect wildlife and forest and monitor products thereof, and thus identify technical assistance needs. ICCWC will support countries wishing to use the Toolkit (see 3.2.1 above). Due to its very comprehensive nature, application of the existing Toolkit is a "heavy" undertaking in that it is both time consuming and expensive. Accordingly, the development of an "ICCWC Toolkit Light" that can be implemented more easily, quickly and cheaply is being actively considered. There is a potentially very useful convergence between this initiative and the national and site-level self-assessments developed under the MIKES Project (see 3.6.2 and Box 6).

[93] Including all the Management , Scientific and Enforcement Authorities officially registered as such under CITES

One of the very likely and desirable outcomes of any national review or assessment would be a recommendation to form a NEST or other national WEN-equivalent, or strengthen it where one exists already. INTERPOL has published Guidelines to assist in this process (see 3.2.3), and also advocates the creation within NESTs of intelligence analysis and investigation Units dedicated to tackling wildlife crime.

Many countries need help not only in organising a NEST or other national WEN-equivalent, but also in strengthening the capacity of the network's individual members and units. In some countries where the trade, especially in high profile product like ivory and rhino horn, is a dominant issue, a problem of too many uncoordinated offers of help can arise.

Tanzania provides a notable example of this. The US government pledged over a year ago that it would assign a USFWS official to its Embassy in Dar es Salaam to support the Government's efforts to develop an overarching wildlife security strategy. In the continued absence of this official, the Government turned for help to the Germans, who already had a senior advisor embedded in the Wildlife Division. At least two other overlapping initiatives have gone ahead at the same time. The local office of UNDP commissioned a dedicated consultancy to design a national wildlife security strategy, while the FZS prepared Security Plans for two premier protected areas[94] which led to the development of a "bottom-up" logic for inter-agency coordination and the sharing of intelligence information, without which field-level protection efforts would remain compromised. Despite all the foregoing the US may still post a security adviser to Dar, but this could in fact help consolidate these and other inputs into an effective single official strategy.

3.7.3.2 NGO involvement: the EAGLE approach

As for protection operations at the field level, there are countries where the capacity and/or integrity of the responsible public institutions is far below that required to provide meaningful enforcement of anti-trafficking laws. In such situations, some Governments will either accept or tolerate the involvement of an NGO in detecting wildlife crime, identifying those involved, and bringing them to court. From the success of the first such project in Cameroon, a formula has emerged now based on the EAGLE (Eco Activists for Governance and Law Enforcement) network, created and led by an NGO called LAGA (The Last Great Ape Organisation). As for Conservation Security Partnerships with NGOs at the PA-level, Central Africa has the longest standing experience with the "EAGLE Approach" (see Volume 4 section 5.5).

Currently, WCS is a partner with the Aspinall Foundation in running an EAGLE project in the Republic of Congo, called PALF (Projet d'appui à l'Application de la Loi sur la Faune sauvage[95]), which runs investigations, assists in operations, does legal follow-up and has a communication department to publicise convictions and other successes. WCS is currently launching EAGLE replicates in the DRC and Nigeria also.

Unsurprisingly perhaps, WCS argues that the EAGLE approach should be applied throughout Africa. Among the bigger economies of Southern and Eastern Africa however, many Governments will be unlikely to tolerate an NGO role in sensitive national-security related matters. In such countries one must strive to build capacity directly within Government, by supporting the development and effective functioning NESTs or WENs for example: this is anyway the only approach with any real prospect of long term sustainability. Exceptions within EA where an interim EAGLE approach might be justified are South Sudan and Somalia, countries in which governance is as weak as some of those in CA and WA.

[94] The Serengeti National Park and the Selous Game Reserve
[95] Project for the Application of Law for Fauna

3.7.4 Develop information management and monitoring systems

Most anti-trafficking strategists stress the need for information from poachers, documentation obtained during seizures, interviews with associated traffickers and other evidence all to be systematically gathered and analysed for a collective response.

However the lack of reliable, comprehensive and consistent data on wildlife trafficking is a major problem at all levels, whether local, national, regional, continental or global. It is important that relevant data and statistics are collected, collated, analysed and disseminated amongst all relevant agencies to assist priority setting in the fight against organised crime at any level.

Part of the problem is that enforcement services are inhibited by the resource demands of multiple reporting requirements and the different formats used by different organisations (INTERPOL, CITES, WCO, TRAFFIC etc). There are a number of candidate platforms on which a unified reporting format could be developed to enable a coordinated multinational response from law enforcement worldwide. These include:

- INTERPOL's global databases and network
- WCO's secure Customs Enforcement Network Communication (CENcomm) applications, notably ENVIRONET, a communication tool that facilitates information exchange and cooperation in the area of environment and wildlife enforcement. The tool enables Customs administrations, other competent national agencies, international organizations and their regional networks to share real-time information as well as reference material, which are essential for successful enforcement
- IBM i2 Intelligent Law Enforcement software that provides flexible intelligence analysis, law enforcement and investigation capabilities that help combat crime, terrorism and fraudulent activity. Notably for WENs it can deliver organizational efficiencies to policing and partner agencies by improving oversight, collaboration and the speed with which information is shared, and by removing barriers to information access and sharing
- the Wildlife Enforcement Monitoring System (WEMS) which has been under development by the UN University for many years but whose use still appears to be limited
- the relatively recent SMART system and software (see 3.6.3).

Logically, ICCWC would provide a useful forum in which to discuss how to rationalise and/or reconcile these different tools, indeed its member organisation UNODC may achieve this under its Global Programme to Combat WLFC, which includes amongst its aims the "Introduction of data collection and analysis systems to provide a detailed information/knowledge base on WLFC, together with better dissemination and use of that information".

Functions that should feature in any law enforcement data system, include the ability to compare actual performance against pre-set targets, whether these be number of man-days on patrol (an index of effort), or the number of arrests or seizures in a given period (an index of success). The ability to analyse one variable against any other is also required, such as number of arrests as a function of effort (an index of efficiency). Use of the ETIS Law Enforcement Effort Ratio (LEER), which represents how effective law enforcement is in intercepting illegal trade in ivory in target countries, is also relevant here.

ICCWC has embarked upon a process to develop a set of global wildlife crime enforcement indicators, to which the EU can provide inputs through a wider package of support to UNODC which is leading on this important effort (see 3.9.3.1).

3.7.5 Apply specialised tools

3.7.5.1 Container control programmes

In the international maritime trade supply chain approximately 500 million container movements are registered each year. With up to 90% of world cargo movement occurring in shipping containers, the size and complexity of this transportation mode is staggering. According to research results no more than 2% of these containers are physically checked after arrival at a destination to verify the contents. The sheer volume of shipping container traffic, along with the sophisticated and often ingenious concealment methods and diverse routings adopted by smugglers of ivory and other wildlife products, makes successful interdiction difficult.

In response to this challenge, Container Control Programmes similar to that proposed by UNODC and WCO for East Africa are needed. The main element of the programme is the creation of dedicated inter-agency container profiling units, known as Joint Port Control Units (JPCUs), comprising customs and other relevant law enforcement officers.

Not only should JPCUs be included in national WENs, but JPCUs should include officers dedicated to detecting and identifying wildlife contraband as opposed to drugs or arms etc. CCPs can train these officers in the identification and inspection of high risk containers, based upon risk analysis and other modern profiling techniques. Additionally, they can deliver the specialised scanners and other technical equipment needed to identify and inspect high-risk freight containers with minimum disruption to legitimate trade and business.

One well publicised type of “technical equipment” being deployed to detect ivory and rhino horn in particular as it transits ports and airports, is the trained detector or “sniffer” dog. NGOs such as WCS in Gabon, RoC and soon Tanzania are providing such dogs for ivory detection, and training their handlers.

Apart from container ports, trained sniffer dogs are needed at all major trafficking hubs (airports and ports) and other “choke points” such as border crossings.

3.7.5.2 Controlled deliveries[96]

Investigations often do not extend beyond the point of detection or seizure. For this reason the increased use of controlled deliveries could have a significant impact on the activities of organized crime groups, as it targets the entire crime chain and facilitates law enforcement action beyond the point of detection or seizure. At the time of writing, both INTERPOL and the WCO, in close consultation with each other, are developing two complementary projects to enhance the use of controlled deliveries to combat wildlife crime.

INTERPOL is developing a 28-month long project, co-funded by ICCWC, which will include training on the application of controlled deliveries and other tracking methods, followed by potential domestic, regional and international operations using these methods.

[96] The technique of allowing illicit or suspect consignments to pass out of, through or into the territory of one or more countries, with the knowledge and under the supervision of their competent authorities, with a view to identifying persons involved in the commission of offences

WCO is developing a multi-year programme to build the capacity of Customs officials in responding to wildlife crime, for which the CITES Secretariat has secured funding from the UK. Following discussions amongst ICCWC partners, it was agreed that this programme should incorporate a controlled delivery component. Countries in Africa and Asia that have the legal framework to conduct controlled deliveries with wildlife specimens will be identified, training workshops will be provided and an international law enforcement operation using controlled delivery techniques will be carried out, as part of the broader WCO programme.

3.7.5.3 Follow the money

To address the serious problem of money-laundering as a facilitator of wildlife trafficking and related offences, countries may need to adopt or amend policies and legislation aimed at the prevention and detection of this crime.

The CITES Secretariat is currently in discussion with the World Bank regarding the development of an e-learning module on wildlife crime and anti-money-laundering. The UK and the European Commission have agreed to fund this initiative.

On 25 March 2014, the International Sustainability Unit of the Prince of Wales Charitable Foundation hosted a meeting in London on "*Following the money from wildlife crime"*. The meeting brought together approximately 30 participants representing a broad range of expertise from the financial sector, law enforcement and wildlife conservation, to discuss how banks and others might use existing tools to "follow the money" from the illegal wildlife trade. Participants welcomed the opportunity to meet with such a diverse group, and welcomed the convening of an Experts Group that could continue to develop promising wildlife trade applications.

3.7.5.4 Forensics

Forensic analyses of samples from seized specimens can significantly contribute to ongoing investigations, the design of appropriate law enforcement responses, and ensuring that the entire crime chain is addressed. For forensic data to be credible and admissible, relevant legislation must be complied with at all times, and appropriate methods and procedures must be used during crime-scene investigation, sample collection, shipping, analysis, interpretation of results and database maintenance.

Law enforcement officers responsible for the investigation of cases involving large-scale ivory seizures are often confronted with the challenge of identifying the most appropriate way to collect and submit specimens to appropriate facilities for forensic analysis. As a major contribution to address this and related problems the International Consortium on Combating Wildlife Crime (ICCWC) on 13 November 2014 released its *'Guidelines on methods and procedures for ivory sampling and laboratory analysis'* in support of the deployment of forensic technology to combat elephant poaching[97]. Led by UNODC, as a member of ICCWC, the Guidelines are intended for worldwide use and are aimed at first responders, investigators, law enforcement officials, forensic scientists, prosecutors and the judiciary. Their purpose is to facilitate the use of forensic science to the fullest extent possible in order to combat wildlife crime, and in particular, to combat the trade in illegal ivory through the provision of guidance to support transnational criminal investigations and law enforcement operations. It includes detailed protocols on methods of sampling and analysis, which can be applied by law enforcement officers and by laboratories with appropriate facilities.

[97] http://www.unodc.org/documents/Wildlife/Guidelines_Ivory.pdf

Forensic analysis techniques are relevant also to seizures of rhino horn and many other wildlife products, and developing the capacity to apply them is discussed more fully in 3.9.3.4.

3.7.5.5 Publicity

NESTs and WENs should ensure that Illicit wildlife trafficking is publicised as a serious crime under national law, notably showcasing successful prosecutions that resulted in significant penalties.

3.8 STRATEGY 4: STOPPING THE DEMAND

3.8.1 Educate and influence consumers

Effectively targeted action plans are needed to eradicate demand for illegal wildlife products, including but not limited to, raising awareness and changing behaviour. Governments should work in partnership with relevant stakeholders, including sectoral NGOs and experts, businesses and civil society. Actions should be scientific and clearly evidence-based, building on research and surveys into consumer knowledge, attitudes and behaviour, and form part of coherent demand-reduction strategies designed on the scale and in a time-frame needed to have meaningful impact, and delivering measurable behaviour change amongst consumers.

The demand-reduction strategies of TRAFFIC and some other NGOs are described in this volume's Sections on elephants and rhinos. WCS for instance is working on demand reduction in key markets, and recognises both the need for multiple approaches to address demand, and the importance of awareness-raising campaigns using both traditional and social media.

As noted in the discussion of ivory demand however (1.4.4.3), demand reduction efforts need to be better grounded in more realistic and comprehensive contextual and factual understandings of consumers and their motivations. This means it may be necessary to go beyond the conservation sector and involve current non-participants who may have important roles, for example the arts investment community, cultural preservation groups, and religious groups.

3.8.2 Other measures

3.8.2.1 Develop alternatives

The identification, development and promotion of sustainable or artificial alternatives acceptable to consumers of endangered wildlife products such as ivory could have a huge impact. More research into such substitutes is needed.

3.8.2.2 Destruction of stockpiles

In addition to their important publicity and awareness-raising value, the destruction of stockpiles is recommended because they are costly to secure and maintain; divert scarce resources away from front line conservation; and their content may enter the illegal supply chain (through theft) and drive speculation. Consequently, Governments – including those of EU Member States - that have stockpiles of illegal products, particularly of high value items such as rhino horn or elephant ivory, should be encouraged to destroy them. Independent audits, or other means of ensuring transparent management, should be carried out prior to destruction as should sampling for DNA analysis.

3.8.2.3 Impose legal moratoria and bans

International trade bans are mediated via CITES. However, there is nothing to stop either regional groupings or individual countries from promoting and enforcing legal moratoria and bans on any product within their jurisdictions.

Thus it is for example, that calls to curb demand by closing all domestic ivory markets through involuntary, legal mechanisms are gaining strength. Some US markets have been closed down recently (see 3.3.4), and all other countries with active domestic markets are under increasing pressure to follow suit including those in the EU (see 1.5.1.5).

It must be noted however, that the USFWS's efforts to enforce a Federal ban on the domestic ivory trade have met significant resistance from owners of antique ivory artefacts, and of musical instruments for example. Despite the legal challenges involved, the Service is confident of developing regulatory compromises that will not undermine the fundamental aim of protecting elephants, in which case the lessons learnt by the US Administration in enforcing a national ban will benefit other countries wishing to do the same.

3.8.2.4 Use high-profile diplomacy and advocacy

The potential value and impact of this approach is inherent to the suggestion made at the High Level Event on Illicit Wildlife Trafficking hosted by Germany and Gabon in New York on the side of the UN General Assembly in September 2013, to establish a Special Representative to the Secretary General to further the fight against illicit wildlife trafficking, and for the UNGA to request this in a formal Resolution.

The UN "*Group of Friends on Poaching and Illicit Wildlife Trafficking*" based in New-York offers a good vehicle to explore this suggestion further. For example, its added-value compared to existing tools deserves closer analysis, particularly with regard to the mandate, profile, timeline and budget of the proposed special UN Representative/Envoy on Wildlife Trafficking. Also, the link with security as well as with other initiatives on natural resources and conflicts could be developed further.

3.9 ACTIONS RECOMMENDED FOR EU SUPPORT

It is obvious that efforts to curb the trade in any wildlife commodity, be it ivory, apes or peacocks, will require essentially the same preventative and investigative procedures and involve the same range of enforcement agencies. It follows that any action taken to strengthen the capacity of the wildlife enforcement machinery stands to benefit very many species, and would therefore represent money very well spent. The question is, what would be the most effective contributions for the EC to make in this regard?

As has been emphasised already, none of the strategic fronts on which the war against illegal wildlife trade can be fought is sufficient in itself, meaning action must be taken on them all simultaneously at global, regional and national levels.

According to the strategic reviews given above therefore, the following actions are recommended for EU support. With so much that needs doing, and with so many other actors also trying to help, these recommendations represent a conscious attempt to avoid an all-inclusive, over-ambitious programme, and instead to identify a realistic selection of interventions that have the potential to generate a very good return on investment in terms of ultimate impact.

It should be noted here that the recommendations arising from the EU's own Expert Conference on the EU Approach against Wildlife Trafficking of 10 April 2014 have been duly considered.

3.9.1 Action to strengthen policies and laws

The EU and its Member States should act on all of the many relevant recommendations arising from its own Expert Conference on the EU Approach against Wildlife Trafficking of 10 April 2014, whether domestic or international in nature.

However, not all of the suggestions submitted by those consulted in the course of this exercise were adopted[98]. Ones that should be included are the need for EU countries to close domestic ivory markets and to destroy any stockpiles of ivory (see 1.5.1.5).

Several of the actions recommended under the other strategic headings will indirectly support the strengthening of wildlife trade-relevant policies and laws, either internationally or nationally.

3.9.2 Action to Stop the Killing

In other volumes of this Report, a compelling case is made for the EU to concentrate a greater proportion of its support for wildlife conservation in Africa on a number of carefully selected Key Landscapes for Conservation or KLCs (for an overview see Volume 1, section 5.1).

The most effective contribution the EU could make to stop the killing at field level, would be to provide the necessary inputs (training, equipment etc.) as part of its support packages to KLCs. Given the severity of the impacts that the ivory and rhino horn trades in particular are having in terms of poaching it follows that of all KLCs, those harbouring key elephant and rhino populations should receive priority funding.

Approaches to alleviate rural poverty, which is a fundamental driver of poaching at the field level, can also be addressed within the context of support to KLCs (see sections 2.2.3 and 3.7 in Volume 3 for East Africa, for example).

3.9.3 Action to Stop the Trafficking

Action is needed at both international and national levels. Options for the former are relatively straight forward, but at the national level direct support to anti-trafficking efforts can take either or both of two basic routes. One accommodates major NGO participation, the other goes directly in support of the Government machinery involved. While the former can be of great value in particular situations, the latter is the one best suited to a major donor like the EU, itself representing Governments. As noted elsewhere, working alongside or even within Government anyway offers the best prospects for sustainable impacts in the long term (see section 3.7.3.2).

Accordingly, the national-level actions recommended here reflect a prioritisation of support for Government agencies.

[98] All contributions are available at http://ec.europa.eu/environment/consultations/wildlife_trafficking_en.htm

3.9.3.1 Continue and expand support for international trade regulation

The EU should continue as an important financier of CITES-mandated actions and CITES' core functions[99], and more especially should not only continue, but expand also, its support for all ICCWC operations, especially those of UNODC which is taking the lead in so many relevant fields ranging from forensics to controlled deliveries to indicators. This overall position with respect to CITES and ICCWC is exactly consistent with that recommended by the recent Expert Conference on the EU Approach against Wildlife Trafficking.

UNODC's *Global Programme for Combating Wildlife and Forest Crime* is considered particularly worthy of support, as it elaborates on all these initiatives, and its anti-trafficking components are particularly well thought-out and constructed. At the time of writing (September 2014), this Programme has secured only US$3 million of the target US$18 million required.

Since this is a ready-to-go programme, much needed in a crisis situation, which ticks all the boxes with regard to appropriate action, and since it is organised regionally, the EU is very strongly recommended to fund its entire African component.

Failing such an all-embracing approach, the EU should support the following more focussed interventions which are anyway consistent with UNODC's Global Programme.

3.9.3.2 Support the establishment of National WENs

The WEN approach to establishing functional, well-coordinated multi-agency enforcement mechanisms offers a great deal of promise in the anti-trafficking context, but there is a dilemma as to how best to go about this.

One approach – evidently favoured by the US - is to develop a regional WEN first, and use this to catalyse the formation (through initial "country assessments"), and then develop the capacity, of the complementary national-level WENs required within each of its member countries.

The other approach – favoured by ICCWC – is to work at the national level first and then, only once each country has the appropriate "machinery" in place, consider the possible need for a WEN at the next level up. ICCWC's Wildlife and Forest Crime Analytic Toolkit was developed specifically with this in mind and holds great potential.

There are several problems with developing a regional body first, especially if it creates a physical institution with its own expensive overheads. The ASEAN-WEN that is often quoted as a successful model to follow has struggled to sustain its operations once US funding support came to an end. Whilst the LATF has not been an unqualified success, the reason it has kept going for 15 years is due to the annual subscriptions of its member states. Without a continuous funding commitment from its member states, it is unlikely any regional WEN can be sustainable. Such a commitment might be forthcoming if members were convinced of its value, but the value-added by an institutional WEN at the regional level is widely questioned.

It is not the value or need for supra-national networking *per se* that is being disputed, but rather the idea that without an actual institution with offices and staff it would never happen. On the contrary, if there are strong WENs at the national level, each with a "focal person" for international relations, there is nothing to stop these

[99] See also the recommendations under 1.5.2.1 and 2.5.2.1 also in this Volume

persons interacting with each other, or with international agencies, directly: it is not as though this would be impossible without the assistance of an intermediary, regional WEN[100]. They are not even an essential pre-requisite to coordinated inter-regional or inter-continental exercises, as Operations Wendi, Worthy and Wildcat have proved. It is because of such considerations of sustainability and value-added that the recent effort to push forward a WEN for southern Africa (WENSA) received only lukewarm support from the states involved, and led them only "to recommend" its formation "in principle", rather than "agree" to it outright.

It follows therefore that the EU should not finance the development of regional WENs as institutions in their own right. The EC can support them in principle, as does CITES and other bodies, not least because they might offer a potentially useful source of relevant training support.

The substantive recommendation however, is for the EU to give priority to supporting the establishment of national-level WENs, initially by funding the application of ICCWC's Wildlife and Forest Crime Analytic Toolkit in any and all countries that would benefit from this, and then by extending support to facilitate implementation of the resultant National Action Plans.

The latter requirement will be essential in most countries: any assumption on ICCWC's part that Governments can be relied on to drive and finance the necessary follow-up action is a weakness in the Toolkit's current application.

One common criticism of the existing Toolkit is that goes into far too much detail. It is further recommended therefore that the EU adds value its current and further investments in the MIKE Project and ICCWC generally, by funding a process to merge MIKE's national-level capacity assessment methodology based on "benchmarks", with the development of a "Light" version of the ICCWC Toolkit. By being easier, quicker and cheaper, the latter should be much more widely applicable and so have greater impact (see 3.6.2 and Box 6).

3.9.3.3 Develop a cadre of international Wildlife Security Advisers

The structure of the organized groups involved in wildlife trade-related crimes has five different levels, from poacher to the end consumer:

- Level 1: Field (protected area, communal and private land): Poachers (individuals or groups)
- Level 2: Local: Receivers/Couriers
- Level 3: National: Couriers/Buyers/Facilitators
- Level 4: National: Exporters
- Level 5: International: Forwarders/Importers/Traders/Consumers

Investigation complexity differs significantly between Levels 1 and 5. Current enforcement activities in source/supply States address criminal syndicate members from Levels 1 to 2 relatively effectively (although with varying degrees of success of course). However these individuals are often easily replaced, and the threat will continue to exist for as long as enforcement activities do not address the driving force behind them at Levels 3 to 5. Organized crime syndicate members on Level 5 are located in transit/consumer countries and beyond the reach of enforcement authorities in supply countries. It is for this reason that increased international cooperation and coordination are vital.

[100] The UNDP consultancy to develop a national wildlife security strategy for Tanzania came to similar conclusions: P. Harrison (2014) Draft Anti-Wildlife Poaching and Trafficking Support Strategy. Ministry of Natural Resources and Tourism, Dar es Salaam

Thus the main challenge for national enforcement agencies is at Levels 3 and 4. This is because identifying and catching the king-pins or "big fish" involved needs inter-agency intelligence-led approaches that are both proactive and reactive, and which can penetrate the layers of secrecy and corruption that protect these people and facilitate their activities. Unfortunately these skills are not well developed, in a wildlife context at least, so it is in this area that national WENs can be expected to add most value provided they are staffed by people skilled in intelligence analysis methods including social network analysis.
However, development of these skills is not straightforward. Probably the best way to develop them is for selected WEN officers to work alongside a person already experienced in the relevant methods, *i.e.* through on-the-job, or experiential, learning. This could be delivered by embedding - for 2 to 3 years - suitably qualified Technical Assistants (TAs), or Wildlife Security Advisers, within national-level WENs or WEN-equivalents. It is interesting to note that the FZS came to a similar conclusion in the course of developing PA-focused security plans, and is arranging for the short-term attachment of British ex-intelligence officers to Tanzania's *National and Transnational Serious Crimes Investigation Unit* to help it address wildlife crime more effectively.

It is recommended therefore that the EU develops an appropriate TA resource that could be supplied on request, and the obvious and ideal partner to lead this initiative is ICCWC[101]. This resource could consist of former police, military, customs and intelligence etc officers from EU member states, especially those who have worked on other similar forms of organised crime (drugs, human-trafficking, arms etc.). Under the proposed scheme, the EU would fund the salaries and expenses of the TA so deployed, and provide them also with limited hardware, software[102] and operational support.

There can be little doubt that the presence of such TA would also help drive many routine aspects of WEN functionality, and optimise links to international agencies such as INTERPOL, EUROPOL, the proposed AFROPOL and WCO. Any resultant improvement in dealing with Levels 3 and 4 in the criminal hierarchy would bring disproportionately massive returns on the investment in terms of saving wildlife. It follows that the deployment of national Wildlife Security Advisers represents a very promising approach for the EC to adopt within its overall strategy.

The first steps would be to win ICCWC's agreement, and then commission a detailed feasibility study in which the AU, ACP and beneficiary states would be consulted as to the diplomatic, technical and practical modalities required to make the scheme work[103]. Initial discussions of the concept held in 2014 with senior Government officials in Kenya, Tanzania and Uganda during preparation of the next EU Regional Indicative Programme generated entirely positive reactions.

3.9.3.4 Forensic laboratories for Africa

The very urgent need for facilities capable of determining the provenance of ivory and rhino horn has been described in the relevant sections of this Volume (1.5.1.2 and 2.5.1.1). The need is arguably most pressing in Southern and Eastern Africa, these being the regions in which the majority of the continent's elephants and rhinos especially are found today. Even so, a significant amount of seized ivory originates in Central Africa meaning a facility is needed in that region also. At present there are two facilities with the potential to provide

[101] Not only is the EC already one of ICCWC's main financiers, but ICCWC also already offers similar TA-type support, e.g. the deployment of Wildlife Incident Support Teams (WISTs), see 3.2.1
[102] See section 3.7.4
[103] Relevant to this would be lessons to be learnt from an intelligence project currently under development in South Africa that aims to better disrupt syndicates higher up the criminal pyramids. A pre-requisite is the buy-in of all relevant branches of Government (Intelligence, Police, Environmental Affairs etc) – in effect the formation of a national WEN. At the time of writing external partners and all other project details are being kept confidential.

regional forensic services for ivory and rhino horn, namely the VGL lab in Pretoria for Southern Africa, and the KWS lab in Nairobi for Eastern. For Central Africa, a lab planned in Gabon has regional potential.

Subject to the inputs of other donors, it is recommended that the EU should provide complementary assistance towards the development and sustainable operations of these labs as a matter of priority and for the following reasons.
Firstly, a substantial amount of investment has already gone into developing a real collaboration between the VGL and KWS labs, so it makes sense to support and expand the work that has already been done in that regard. Secondly, all such labs have the potential to determine the identity and provenance of very many types of wildlife product, not just ivory and rhino horn, thus contributing to the overall effort to address illicit wildlife trading in general.

The VGL Laboratory, Pretoria, South Africa

The Pretoria rhino-horn facility should be developed further to provide additional ivory analysis services for southern Africa. As a proven performer of the highest international calibre that already possesses most if not all of the expensive equipment required, it should have relatively little difficulty expanding into this niche subject only to it being fully and sustainably funded: the EU could help assure this.

The KWS Laboratory, Nairobi, Kenya

As noted in Volume 3 (3.2.2), this facility already has in place the security infrastructure and policies needed to maintain the admissibility in court of biological evidence for prosecutions and, with help from the VGL lab, capacity is already being developed there to provide a regional service with respect rhino horn analysis. It was confirmed in the course of the present study that KWS envisages a state of the art lab in forensics that will be of strong regional significance, and has developed a policy of making the lab available to East African neighbours on a not-for-profit/at-cost basis. Further, East African scientists and technicians will be welcomed at the new lab for training and practical work. Given this pre-existing regional orientation, the KWS lab is the obvious place in which to develop a regional analytical service for ivory also, not least because the same equipment can be used whether the sample is rhino horn or ivory.

As of May 2014, the lab was half built and lacked essential equipment. Cost estimates for fully equipping it varied: according to WWF $380,000 was required (J. Okori, pers. comm.), while associates from the Smithsonian estimated up to $774,000 inclusive of a $240,000 DNA sequencer (D. Schindel pers. comm.). These estimates did not cover the need for computer networking and data storage hardware and software that comply with stringent security protocols. Given the dynamics of this field, there would be a need also for continuous training estimated at $45,000 p.a. Yearly running costs, exclusive of training needs, were estimated at $150,000 p.a. for a full staff complement. This translates to an investment of between roughly EUR 500,000 (for equipment only), or EUR 1.0m for a 3-year support programme,

As recently as September 2014 however, KWS announced that a portion of a $3.0 million grant from the US Government in support of anti-poaching activities in Kenya would be devoted to development of its forensic lab. It is not known however, whether that will be sufficient to cover all the estimated costs detailed above.

In the event of a continuing shortfall, the EU is encouraged to offer any supplementary funding needed. However, unless one was prepared prior to the US inputs, a serious design study should be undertaken before any funding commitment is made. This would need to give careful consideration to trained manpower and sustainability issues in particular.

The EC is already considering limited support to the KWS lab within its 2014-2020 Regional Indicative Programme (RIP) for Eastern and Southern Africa, but the earliest these funds could come on line is 2015. Given that CITES is the lead agency in coordinating ivory forensics, an alternative source of relatively quick funding might be the EU's Strategic Cooperation Agreement with UNEP under which funding is available for support to multi-lateral conventions including CITES. DG DEVCO is recommended to contact UNEP's Liaison Office in Brussels to explore this option.

The ANPN laboratory, Gabon

UNODC is very active in Gabon, where it is implementing the ICCWC Wildlife and Forest Crime Analytical Toolkit. It is working also with the Agence Nationale des Parcs Nationaux (ANPN) to develop a functional lab that can do DNA, fingerprints and so on, linked to an intelligence database. In this connection, UNODC is going to post two full-time staff to ANPN in the latter half of 2014. The ANPN anticipates the need for donor support in order to make this facility a reality. Provided it can be developed as a regional facility working to all the relevant international standards, rather than serving Gabon alone, EU support is strongly recommended.

It should be noted that the measures recommended here will benefit not only rhinos and elephants, but certain other species threatened by illegal trade also, meaning support to these three regional labs has the potential to help solve several very high priority issues at once, and as such would be an extremely cost-effective use of conservation funds.

3.9.4 Action to Stop the Demand

3.9.4.1 Support selected demand reduction efforts

Support TRAFFIC and other selected NGOs' targeted research and awareness-raising activities to reduce demand for rhino horn and ivory especially.

TRAFFIC's work is seen as particularly worthy of support in that is directly linked to the work of the AfESG, AfRSG and CITES. As a member of ICCWC, support for the demand reduction components of UNODC's *Global Programme for Combating Wildlife and Forest Crime* would also support related CITES efforts because they too will address the demand side of WLFC through awareness-raising at global and national levels.

The UNODC programme will build on its existing expertise in running effective global awareness campaigns, such as the Blue Heart Campaign against Human Trafficking and its successful video campaign against Transnational Organized Crime. Dedicated media outreach both on traditional and new forms such as social media will be deployed. To maximise impact, UNODC will learn lessons from other agencies, for instance the anti-trafficking campaign launched by UNWTO, UNODC and UNESCO in March 2014 titled "*Your Actions Count – Be a Responsible Traveller*".

Its demand-reduction aspects thus add further weight to the principal recommendation already made in 3.9.3.1 above to provide overall support to UNODC's Global Programme.

3.9.4.2 Deploy Wildlife Conservation Envoys

It is generally agreed that the scale and nature of the illegal wildlife trade calls for an effort to sensitise both supply and consumer Governments at the highest possible level, in order to secure the greatest possible chance of influencing them to make a determined and effective response. Given the limited success of events like the African Elephant Summit in actually interacting with Heads of State, there is merit in the idea of the EC dispatching official envoys to carry this message to them.

Many other international organisations use instantly recognisable film, music and sports stars to promote their mission. The UN for example regularly enlists such persons to act as Ambassadors for specific issues, and a serious proposal to appoint a UN Special Representative on Wildlife Trafficking is under consideration (see 3.8.2.4).

There is no reason why the EU could not follow suit, and there are many celebrities of European nationality who would be suitable. In terms of access to Heads of State (and influential First Ladies) however, envoys would need appropriate diplomatic credentials. This would not be an issue if the envoy was royalty for example, and it is notable here that several members of the British royal family are already very concerned and closely involved with wildlife conservation generally, and trade issues particularly.

A ban on the domestic ivory trade in China, which many believe to be the only way the global illicit trade can be closed down, would almost certainly only be possible as a result of concerted advocacy at the level of the State Council, an apex body that could only be influenced by intense diplomatic pressure applied by envoys enjoying maximum respect and honour.

Irrespective of their identity, an official EU Wildlife Conservation Envoy could not only lobby Heads of State for action against the illicit wildlife trade, but could at the same time publicise and promote the major new funding initiative(s) that it is hoped the EC eventually will adopt as a result of the present study.

4 SECTION 4. MADAGASCAR

4.1 SPECIAL FEATURES OF MADAGASCAR

The island of Madagascar with a land area of 592,000 km^2 is estimated to have separated from the rest of Africa approximately 165 million years ago as Gondwanaland broke up. Its long isolation, interspersed with occasional biological colonisation has resulted in its high level of biological endemism. The relief is complex and variable and its highest peak is 2,876m. The island lies predominantly within the tropics and has a tropical climate. Weather is mostly determined by easterly trade winds from the Indian Ocean that rise over the eastern escarpment where the majority of the rain falls. The western regions therefore lie in a permanent rain shadow with conditions becoming hotter and drier further to the west. During the austral summer, a monsoon regime affects the north of the island. The northeast is the wettest part of the island and the south-west is the driest. These conditions determine the prevailing natural vegetation types, which are broadly categorized as rainforest in the East, deciduous forests in the West and dry spiny forest vegetation in the South and Southwest.

Madagascar's unique biodiversity

One hectare of forest lost in Madagascar has a greater negative impact on global biodiversity than a hectare of forest lost anywhere else on earth because of its exceptional levels of species endemism (see Table 7). Endemism at the genera and family level is even more unusual with 22 endemic families and 478 endemic genera among the plants and vertebrates. Madagascar is home to five endemic plant families and an estimated 14,000 plant species, of which nearly 90% are endemic[104]. Primate biodiversity and endemism are also very high, placing it among the world's highest priorities for primate conservation: 101 species and subspecies are all endemic[105] (Figure 4). There are five endemic families of birds with 209 breeding species, of which 51% are endemic to Madagascar[106]. In addition, there are 370 species of reptiles[107] and Madagascar's amphibians are almost entirely unique to the country, with 244 species of which 99% are endemic[108] (Figure 2).

Unfortunately Madagascar's species are also extremely threatened and there has been a steady trend in the number of species listed in IUCN's redlists. The combination of elevated endemism and high threat means that Madagascar has consistently been considered in the top 10 global hotspots in the various hotspot analyses that have been completed.

[104] Ramananjanahary, R.H., Andriambololonera, S.R., Madagascar Research and Conservation Program. 2010. Madagascar's endemic plant families species. Missouri Botanical Garden, Madagascar Research and Conservation Program
[105] Mittermeier R.A, Gil P.R., Hoffman M., Pilgrim J., Brooks T., Mittermeier C.G. Lamoreux J., Da Fonseca G.A.B. 2004. Hotspots revisited. CEMEX. 392 pp.
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[108] Vieites, D.R., Wollenberg, K.C., Andreone, F., Köhler, J., Glaw,F., Vences, M. (2009): Vast underestimation of Madagascar's biodiversity evidenced by an integrative amphibian inventory. Proceedings of the National Academy of Sciences 106: 8267-8272.

Figure 2. Brookesia chameleons

Madagascar is the main centre of diversity for chameleons and half of all species are endemic to the island. The Brookesia chameleons, such as this Brookesia superciliaris, are among the World's smallest reptiles and are camouflaged for a life spent in the leaf litter of the forest floor.

Table 7. Levels of species richness, endemism and threatened terrestrial and freshwater species in Madagascar

Taxa	No. of species	% Endemism	% Threatened
Fish (freshwater)	143	65	60
Amphibians	244	99	34
Reptiles	370	92	96
Birds (breeding species)	209	51	17
Bats	30	60	23
Carnivores	11	72	72
Insectivore	29	93	24
Rodents	25	88	20
Primates	101	100	39
Non-marine plants	14,000	83	9

Sources : Species figures are from Goodman & Benstead, 2005 except for sources listed in the main text IUCN 2011.2 - www.iucnredlist.org Downloaded on 23 April 2012.

Almost all of the non-aquatic biodiversity is restricted to the country's forests. Many species of both plants and animals are restricted to relatively small areas of the country, meaning that fine-scale analyses identify many different habitat types and species assemblages. For example, 213 Key Biodiversity Areas (KBAs) are recognized, each of which is considered a priority for biodiversity conservation[109]. However there are broadly three very distinct forest ecoregions that are commonly used to classify the country's forests: rainforests, dry deciduous forests and the distinct and unique spiny forest. There are also various "transitional forests" at the boundaries of these categories. Many of the biggest conservation projects over the last decade have focused on the eastern rainforests where there is highest species diversity. Many conservationists therefore believe that more emphasis is needed in the western dry forests and particularly the southern Spiny forest, which is suffering the highest deforestation rates.

Current conservation efforts emphasise the role of forests in providing ecosystem services in addition to protecting biodiversity. The value of forests and the costs of deforestation in Madagascar have been estimated in various studies[110],[111]. The value of direct hydrological services and tourism revenues alone justified the direct and opportunity costs incurred by protected areas, and these studies have provided a large impetus for developing the National Environmental Action Program (NEAP).

Wetlands are also important habitat for Madagascar's native biodiversity. Five hydrographic regions contain 42 major river systems. In addition to hundreds of small lakes there are 18 that exceed 1000 hectares in area. The five major lakes are Aloatra, Kinkony, Ihotry, Itasy and Tsimanampetsotsa. All except Lake Itasy are included in the protected area network. All the lakes are important inland fisheries.

[109] Critical Ecosystem Partnership Fund 2014. Ecosystem Profile: Madagascar and the Indian Ocean Islands. Conservation International, Washington D.C. 281 pp.
[110] World Bank, USAID, Cooperation Suisse, UNESCO, UNDP, WWF. 1988. Madagascar Environmental Action Plan. Carret J. and Loyer D. 2003. Comment financer durablement le réseau d'aires protégées terrestres à Madagascar? Apport de l'analyse économique. World Bank, Washington DC and Agence Française de Développment, Paris.
[111] World Bank, 2012. World Development Indicators 2012. Washington DC. (http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2012)

Parts of southern Madagascar suffer from severe droughts in most years while areas in the East, North and occasionally the West regularly experience severe floods during the rainy season. Groundwater supplies are relatively fresh except for deeper aquifers and aquifers along the coast which are affected by saline intrusion. Poor infrastructure means that less than 48% of Malagasy have access to safe, clean water supplies[112]. The country is not on track to meet the millennium development goals for improved water or for sanitation but forest protection is a vital contribution in this regard.

Although Madagascar is famed for its terrestrial biodiversity, its marine and coastal habitats are also extremely important. The Southwest Indian Ocean is the world's second richest region for corals, with only the so called "coral-triangle" of Southeast Asia having more species[113]. Other important habitats such as mangroves, seagrass beds, seamounts and the deep ocean are also important for biodiversity and threatened marine species. The rich marine resources of the region are vital to the human population and sustain human livelihoods and well-being throughout the coastal zones of the countries of the region: Comoros, Kenya, Madagascar, Mauritius, and Seychelles. The region is recognised as one of five global priority "fisheries-conservation hotspots" where there are increasing exploitation rates, high biodiversity, and poor management capacity but where fisheries are still relatively intact[114]. In addition to resident marine biodiversity, Madagascar's seas are important for migratory species. Significant populations of cetaceans, marine turtles, sharks, coelacanth, and rays still occur in these waters, as well as a few remnant populations of dugong. Tuna populations are declining, but this region is still one of the least degraded tuna fisheries in the world.

4.2 Conservation Issues and Challenges

Deforestation

The main threat facing Madagascar's endemic wildlife is deforestation. Annual deforestation between 1990 and 2000 was 0.8%, between 2000 and 2005 it was 0.5%, and it fell further to an average of 0.4% between 2005 and 2010[115]. Deforestation rates for the dry, more flammable, forests of southern Madagascar have remained higher than for other forest types. Management regime was also important and deforestation in the well-established national parks and reserves has been close to zero since 2005, demonstrating the success of conservation programs in the few areas where they have been implemented. The analysis identified approximately 9.2 million hectares of remaining natural forest in 2010, with an annual loss of approximately 37,000 hectares.

The main threat to forests is slash and burn for agriculture, known as *tavy* in Madagascar. In the East, *tavy* is principally for hill rice whereas in the West and South it is practiced to cultivate a mixture of crops, usually cassava and a mixture of vegetables. The population of the country is largely rural and dependent on subsistence farming as their principal livelihood. As with many tropical countries, increasing population density and competition for land has forced farmers to shorten the fallow periods of *tavy* and this leads to decreasing crop yields and soil degradation. Ultimately the yields become so poor that farmers seek out new forest to clear and cultivate[116].

[112] World Bank, 2012. World Development Indicators 2012. Washington DC. (http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2012)
[113] Obura D. 2012. The Diversity and biogeography of Western indian Ocean Reef-building Corals. Plos One 7:9, e45013
[114] Worm B. & Branch T.A. 2012. The future of fish. Trends in Ecology and Evolution. doi: 10.1016/j.tree.2012.07.005.
[115] Office Nationale de l'Environnement, Direction Générale des Forêts, Foiben-Taosarintanin'i Madagasikara, Madagascar National Parks and Conservation International 2013. Evolution de la couverture de forêts naturelles à Madagascar 2005-2010. ONE, Antananarivo. 42 pp
[116] Styger, E., Rakotondramasy, H. M., Pfeffer, M. J., Fernandes, E. C. M. & Bates, D. M. 2007: Influence of slash-and-burn farming practices on fallow succession and land degradation in the rainforest region of Madagascar. – Agriculture, Ecosystems and Environment 119: 257- 269.

In the West and particularly the South, charcoal production to supply urban areas is also a major driver of deforestation[106]. Over 90% of urban households depend on charcoal or wood for cooking. Whereas charcoal in Eastern and Central Madagascar mostly comes from managed Eucalyptus plantations, in the West and South it comes mostly from natural forests. Deforestation analysis shows that forest loss in the West and South is most acute close to urban areas and this is mostly due to the demand for charcoal.

There have been few legal large-scale forestry operations in natural forests in the last few decades in Madagascar, however uncontrolled, illegal forest exploitation is common. Typically it is highly selective and therefore degrades forest rather than causes total deforestation, but secondary impacts from hunting by the loggers can devastate local wildlife populations. In some cases illegal forestry can become large scale. For example, immediately following a military coup in 2009, logging of rosewood in the Marojejy and Masoala national parks led to international condemnation of the new regime. It was conservatively estimated that between 23,325 and 46,650 rosewood trees, worth well over US$100 million, were removed from the two parks for export to China, causing extensive damage to the forest and wildlife populations.

Over the last decade mining investment has grown in Madagascar and two large scale mines have been established: a Rio Tinto-owned illmenite mine in the southeast and the Ambatovy Nickel and cobalt mine run by Sherritt International. Both mines involved the destruction of natural forests and in both cases the companies have committed to ambitious habitat restoration programs once the mining operations are finished as well as entering into voluntary "biodiversity offset" programs in an attempt to have positive net impacts on biodiversity conservation. By contrast, small scale mining operations have a poor record of adhering to their environmental obligations and uncontrolled illegal artisanal mining for gold and precious stones can be extremely destructive to natural forests and national parks. Mining "rushes" where several thousand miners move into areas following rumours (or real) discoveries of gold or gemstones occur regularly and have impacted Ankarana and Isalo national parks as well as several of the new protected areas created since 2003[117]. As with illegal forestry, these mining rushes result in the destruction or degradation of large areas and miners hunt local wildlife.

Hunting

Hunting of wildlife for bushmeat consumption is a threat for Malagasy biodiversity that has received more attention by the conservation community in recent years and has either been underestimated in the past or has recently increased. Lemurs and tortoises, tenrecs, bats and some frog species are the main species groups that are targeted. Most of the hunting is for subsistence and only a small portion of bushmeat is sold in towns and cities.

Pet trade

Illegal collection of animals for the international black-market pet trade is a threat for some specific animal species and groups. The ploughshare tortoise is one of the most threatened species from this trade and less than 200 adult individuals are thought to remain in the wild. Many of Madagascar's reptile and frog species are highly prized in the illegal wildlife trade and this has decimated populations of several frogs from the colourful and endemic *Mantella* genus. Despite high profile arrests and regular seizures of animals being transported out of Madagascar, the high value of species such as ploughshare tortoise, for which adults can be sold for $20,000 each, make them an attractive target to well organised international wildlife trafficking gangs.

[117]Tilghman, Laura, et al. 2005. Artisanal sapphire mining in Madagascar: Environmental and social impacts. Burlington, University of Vermont. http://www.uvm.edu/envnr/gemecology/assets/Tilghman_et_al_Madagascar_2005.pdf

Climate change

Climate change is an underlying issue that exacerbates the other threats. Future climate change scenarios for this region suggest that Madagascar's climate will become hotter, with the north of the country becoming wetter while the south becomes drier. Cyclones are predicted to become more intense but are not expected to become more frequent. The country already experiences 2-3 major cyclones a year that cause extensive damage to rural communities, often forcing them to turn to using forest and wildlife resources to cope with the aftermath of these devastating events.

Marine and coastal

Madagascar's marine resources are an important part of the national and local economies, but poor management threatens the sustainability of many fisheries. Legislation designed to protect marine resources is often ignored, leading to an open-access situation that progressively degrades important habitats. Overfishing and destructive fishing techniques are the two biggest threats to the country's marine resources and these are exacerbated by climate change. Several large-scale coral bleaching events have been recorded in the western Indian Ocean over the last decade and many of Madagascar's reefs have suffered as a result.

4.3 ONGOING CONSERVATION EFFORTS

The only management regime for natural habitats that translates into actual conservation management on the ground is the protected area system. Although the first protected areas in the modern sense were established in 1929, before the 1990s they were essentially "paper parks". At that time the Madagascar National Parks administration (originally known as ANGAP – *Association Nationale pour la Gestion des Aires Protégées*) was created and now manages a network of 47 protected areas (Table 8, Figures 3 & 4). Much more still needs to be done to improve this network from ensuring sustainable finance to improving the daily tasks of rangers but in general protected area management has greatly improved over the last two decades and the results of deforestation analyses show that natural habitat destruction within the Madagascar National Parks network is greatly diminished.

Table 8. Protected Areas within the Madagascar National Parks Network (IUCN categories I, II and IV: Strict Nature Reserve/SNR, National Park/NP, Special Reserve/SR). In some cases two protected areas are managed together in one management unit.

Protected Area Management Units	Area (Hectares)
Rainforest Ecoregion	
Ambohitantely SR	5,600
Montagne d'Ambre NP et Forêt d'Ambre SNR	25,470
Manongarivo SR – Tsaratanana SNR	106,282
Lokobe NP	862
Mangerivola SR	11,900
Zahamena (NP and SNR)	63,898
Andohahela NP	76,020
Ranomafana NP	41,601
Midongy du Sud NP	192,198
Ambatovaky SR	78,050
Mantadia NP and Analamazaotra SR	16,290
Marojejy NP and Anjanaharibe SR	103,570
Andringitra NP and Ivohibe SR	34,613
Masoala NP and Nosy Mangabe SR	230,520
Marotandrano SR	42,200
Manombo SR	5,320
Kalambatritra SR	28,255
Betampona SNR	2,228
Marolambo NP	70,000
Mananara Nord NP	24,000
Dry Forest Ecoregion	
Ankarana SR	18,225
Analamerana SR	34,700
Baie de Baly NP and Namoroka NP	79,160
Sahamalaza NP	26,035
Bemaraha (NP and SNR)	152,000
Zombitse – Vohibasia NP	36,803
Isalo NP	81,540
Forêt de Mikea NP	185,000
Ankarafantsika NP	130,026
Kirindy Mitea NP and Andranomena SR	168,620
Spiny Forest Ecoregion	
Cap Sainte Marie	4,850
Tsimanmpetsotsa	143,200
Beza Mahafaly	4,600
Marine and coastal	
Nosy Ve	167,000
Nosihara	183,111

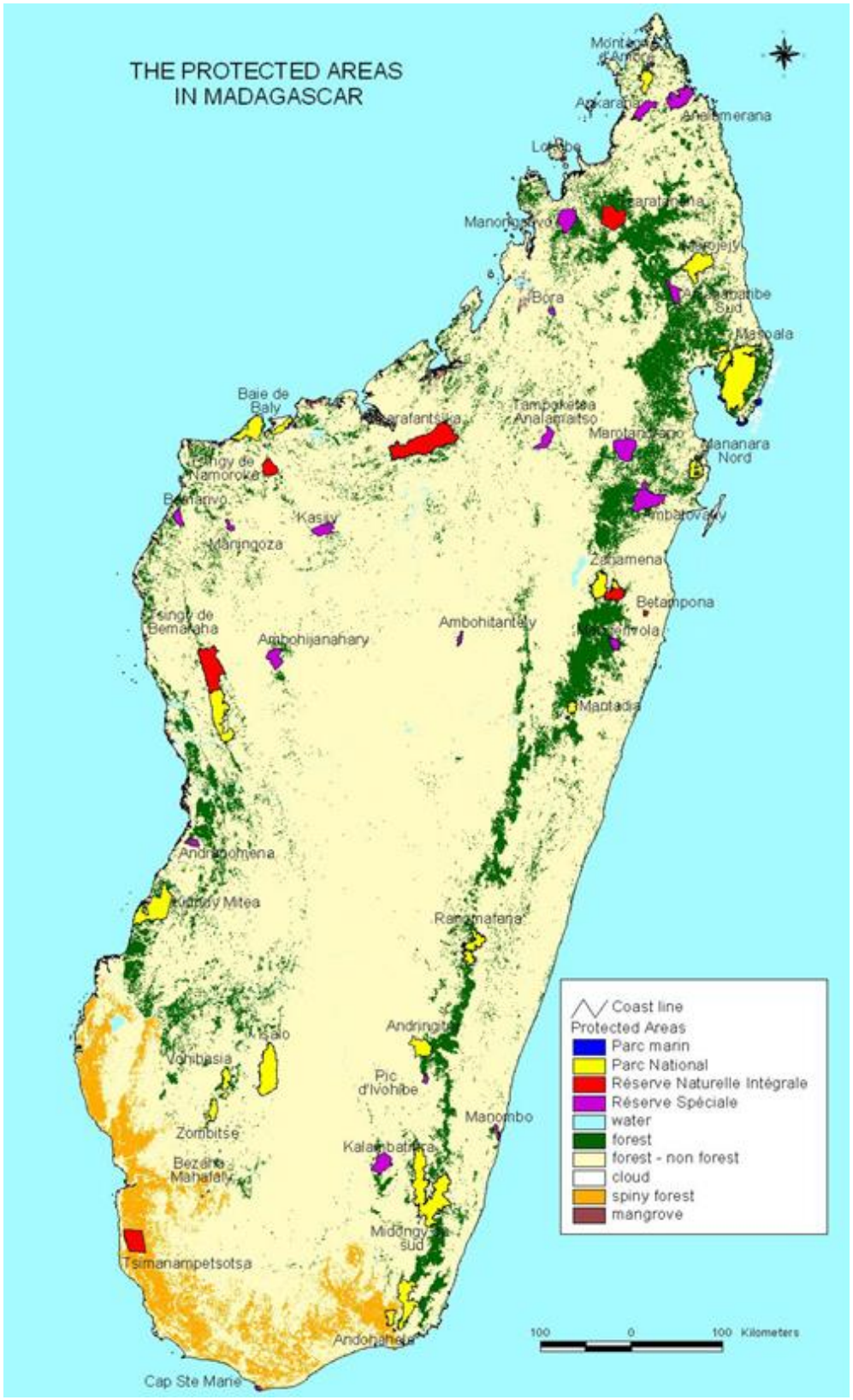


Figure 3. Map of protected areas managed as part of the Madagascar National Parks Network (IUCN categories I-IV) and remaining forest habitat

Figure 4. The Protected Areas system of Madagascar

Including all existing protected areas, sites currently being created/designated as (IUCN categories I-VI) and priority areas for future protection

In 2003, the government announced plans to expand the PA network by adding new types of protected area (allowing a wider range of management objectives) to the national system and by adopting governance arrangements that allowed a wider group of stakeholders to play a direct role in decision making and management of these areas (Table 9). Although they currently benefit from provisional protection, these new protected areas still have a long way to go to become effectively managed. Nevertheless, the results from the most advanced new reserves show that the model is clearly one that deserves further support and this should be an important future emphasis of the government and donors as they think of conservation of natural capital beyond traditional strict protected areas.

Table 9. Protected Area coverage in Madagascar

Type of Protected Area	Current Area fully gazetted (Ha)	Planned Area (Ha)
National Parks and Reserves managed by MNP*	2,323,370	2,823,370
New terrestrial protected areas	0	3,450,046[a]
New marine protected area	0	468,0832[b]
Total	**2,323,370**	**6,741,499**

*MNP – Madagascar National Parks manages protected areas corresponding to IUCN categories I,II and IV. The New protected areas are collaboratively managed by the state and other partners, with communities usually playing an important role; these protected areas correspond to IUCN categories III, V and VI.

[a,b] these areas are currently under provisional protected status

Other than protected areas, most of the remaining natural forest is officially the domain of the State. These forests are regulated through the forestry legislation that is largely based on the French colonial system. Communities can apply to manage forests through "Management Transfer Agreements" but in practice almost all of these contracts have now been integrated into the New Protected Areas that are being created. A few small private forests also exist and the Forestry Department can give out forestry permits. In practice however, the forests outside of the protected area system are subject to free access and are unmanaged. Wetland and marine areas that are not in protected areas are still subject to extensive fishing legislation. However, like the forestry legislation, although this is often based on sound principles, the government agencies responsible are poorly equipped and don't have the resources to enforce it.

Madagascar is emerging from a period of political crisis that started with a coup in 2009 and led most donors to suspend their support to environment programs. As a result, government institutions were weakened, many donor-dependent conservation initiatives were stopped and threats on the country's wildlife and other natural resources increased. The crisis has been characterised by a period of particularly poor environmental governance with uncontrolled illegal logging of precious wood in national parks, increased wildlife trafficking and bushmeat hunting and increased deforestation. In recognition of the dire situation several donors have restarted conservation programs (often short term emergency ones) and these broadly support three main themes:

- Support to the protected area system, including both the national parks network and the new co-managed reserves
- Support to preparing for a national Reducing Emissions from Deforestation and Degradation (REDD+) program
- Support to the development of sustainable community forestry approaches

Longer term donor plans are not yet clear. Table 10 shows the current main sources of funding for programs that include elements of biodiversity conservation. The majority of funding is expected to cease at the end of 2014 and no plans to extend or replace existing programs have been announced.

Table 10. Major current and planned biodiversity conservation programs in Madagascar

Donor	Project	Approximate Funding	Period
GEF	Support to 5 new protected areas (Managed Natural Resources and Protected Areas)	$ 6 million	2013-2017
GEF	Contribution to the PA Trust Fund	$10 million	2012-2014
World Bank/IDA	Sustainable management of natural resources, including Protected areas Management: National parks and New Protected Areas	$42 million	2012-2014
CEPF	Support to civil society conservation efforts in the Western Indian Ocean Islands Hotspot	Unspecified, probably $3-5 million for Madagascar	2014-2018
EU	Support to the creation of Marolambo National Park and rural development activities around 4 protected areas	3 million Euros	2009-2014
USAID	Preserving Madagascar's Natural Resources - focus on illegal wood trade	$ 1.5 million	2013-2014

4.4 LESSONS LEARNED AND PROMISING APPROACHES

It is widely recognised in Madagascar and elsewhere that biodiversity conservation efforts will not work if they do not have the support of local people. The evolution of Madagascar's environment program since the early 1990s reflects this, with a strong early emphasis on national parks and strict protected areas, whereas current site-based approaches put an enormous emphasis on integrating local communities as co-managers of sites and ensuring that they derive benefits from conservation. In combination with this change, civil society groups have taken on a much greater role in modern conservation efforts, which were previously seen as the responsibility of government institutions. Madagascar now has hundreds of local environmental NGOs and several national ones, many of which are playing a role in the management of new protected areas.

Stable funding for conservation is crucial and Madagascar's near total reliance on external funds for conservation has left it vulnerable to crisis periods each time a donor program comes to an end or funding is suspended for political reasons. Recent events since 2009 should serve as a lesson that removing funding at a time of political turbulence plays into the hands of powerful interests that want to exploit natural resources. It is clearly essential to establish long term, sustainable financing mechanisms so that basic protected area management and wildlife conservation activities can be sustained.

An enormous opportunity was created when Madagascar revised its protected areas legislation in 2005 to create new categories of protected areas and allow for an increased role in their management by civil society groups. Plans for the creation of new protected areas have been largely supported by Malagasy society because the new areas allow for a broad range of uses and provide opportunities for local communities to get official access rights to resources. While these approaches are still in their infancy in Madagascar, they provide an important opportunity to protect wildlife populations in areas that are complementary to the existing network of national parks and strict nature reserves. Unfortunately few donors have recognised the opportunities that the new system provides and this promising approach is in need of financial support.

Some progress has already been made towards establishing sustainable financing for protected areas through the successful establishment of a "Trust Fund" and this should be further strengthened. The fund's existence provides an important opportunity for donors that want to support conservation activities directly at particular sites. By making contributions to the fund that are specifically earmarked for the site, a donor can ensure the availability of future funding that would ensure that the donor's current site-based investments are safeguarded.

4.5 INDICATIVE CONSERVATION ACTIONS NEEDED

Institutional support

Since the inception of the national environment program in the early 1990s, support to Malagasy government institutions has been a key part of donor support. Two of these institutions have become key to successful conservation efforts: Madagascar National Parks with responsibility for managing the country's national parks and stricter nature reserves (protected areas equivalent to IUCN categories I, II and IV) and the National Environment Office with responsibility for oversight and monitoring of the Environmental Impact Assessment process and environmental monitoring in the country. Both organisations have a professional cadre of staff and are relatively effective at enforcing relevant environmental legislation for which they have a mandate, but both are underfunded. **Further capacity strengthening of these two institutions and support for long term financing strategies are crucial needs**.

Overall responsibility for the enforcement of most legislation related to forests and terrestrial biodiversity lies with the Department of Biodiversity and Protected Areas within the Ministry of Environment and Forests. This new department, was created in 2008 in recognition of the need to coordinate the management of the country's new protected areas that are equivalent to IUCN category V and VI protected areas. The Department of Biodiversity and Protected Areas has not received any significant support from past or current donor programs and it is understaffed, underequipped, existing staff lack training. **Building the capacity of this department is a priority for the success of the country's plans to maintain a comprehensive protected area network**.

Dismantling Wildlife Traffic Network

Wildlife trafficking and illegal wood exports from Madagascar leave the country from only a handful of exit points: notably the airports of Antananarivo and Toamasina and the port at Toamasina. **Targeted efforts to strengthen surveillance and build capacity of the customs and border police and other enforcement agencies** at these bottlenecks would make international wildlife trafficking extremely difficult. Wildlife trafficking has not been a focus of other donors in the past and no current donor programs are designed to address it.

Support for site protection

Site protection is undoubtedly the most important priority to conserve Madagascar's endemic wildlife. All Madagascar's protected areas are dependent on donor support and huge gaps in funding for basic protected area management remain. **Support is needed for the network run by Madagascar national parks as well as for the new protected areas created since 2003**. Within the Madagascar National Parks network, further analysis and discussions with other donors to the environment program are needed to understand their likely priorities. Several donors have had a traditional focus on particular areas (e.g. KfW, USAID and the World Bank) and this may continue.

A clear priority will be to ensure that the protected areas designated as World Heritage areas are effectively managed and that long term funding support is established for them. The current World Heritage portfolio includes Bemaraha National Park in Western Madagascar and a group of national parks included as a World Heritage "cluster" representative of Madagascar's "Atsinanana Eastern Rainforests": **Marojejy, Masoala, Zahamena, Mantadia, Ranomafana, Andringitra and Andohahela**. Ensuring that these sites are supported should be a priority. In addition, the World Heritage listing for the "Atsinanana Eastern Rainforests" recognizes the importance of the forest corridors that link the national parks. Several of these corridor areas have now been designated as new protected areas that are co-managed by the government,

NGOs and local communities. The **Makira, Ankeniheny-Zahamena and Ambositra-Vondrozo forest corridor reserves** are the most advanced of these areas. Finally, two national parks that were included in the original World Heritage nomination but not included in the final designation because they are relatively new and their management was not yet strong enough should also be considered for support: **Marolambo** and **Midongy du sud** National Parks.

The government of Madagascar has also indicated that its next **proposal for Natural World Heritage designation will be a "cluster" of protected areas representing the western dry deciduous forests**. In recent years most of the major terrestrial conservation investment in Madagascar has focused on the eastern rainforests. To achieve World Heritage status the best sites to include within the cluster would need to be determined, additional investment will be needed to ensure that the chosen protected areas are managed to the standard expected of World Heritage Sites, and the official nomination proposal would need to be prepared. A sustainable finance package would also be needed to ensure that the sites included in a Western Dry Forest World Heritage "cluster" had sufficient resources to be effectively managed over the long term.

Improved Forest Governance

Madagascar's forestry service remains ineffective against illegal cutting of precious timber (notably rosewood and ebony). **Reform and strengthening of the forestry service remains an essential need if forest management issues outside of protected areas are to be addressed**. Precious timber is being harvested almost exclusively for export, mainly to Asia. All precious wood export exits through a handful of ports and strengthening of forestry and customs to make oversight effective at these ports would control the problem (also important for stopping wildlife trafficking). For that to work, corruption would also need to be addressed, most notably by strengthening independent monitoring and transparency of forestry governance. The EU and EU-member countries have a history of supporting an independent Forestry Observatory and this institution should be strengthened. One of the impacts of the uncontrolled exploitation and export of rosewood following the 2009 coup was the outcry about this issue among the Malagasy public, the increasing national media attention it has received and the establishment of civil society organisations specifically dedicated to natural resource governance issues. This change provides new opportunities to encourage civil society participation and debate about the governance of precious forest resources.

The persistent threat of deforestation of natural forests for charcoal production in western and southern Madagascar needs to be addressed if natural forests in these areas are to be maintained outside of protected areas. The establishment of large eucalyptus plantations surrounding Antananarivo and several of the other cities in eastern Madagascar provides most of the charcoal needed by these urban populations. **The development of similar plantations to act as a source of charcoal for cities in the West and the South of the country is necessary to provide an alternative of the current destruction of natural forest**.

Marine and Coastal

Over the last decade there has been a greater recognition of the need to protect Madagascar's marine resources and coastal fisheries. The most promising approach has been **the creation of small, community managed fisheries reserves where careful zoning and seasonal restrictions are put in place to help habitats and fish stocks recover**. The success of such pilot reserves and subsequent increase in fish stocks has created great demand from fishing-dependent communities to develop similar initiatives in new areas. While several NGOs and the government's fisheries department support some of these initiatives, few major donors are currently supporting this community-based approach to marine and coastal resource protection.

Training

Formalised protected areas training has been largely ignored during the environment program and although staff have received training this has been haphazard as opportunities arose. Recently the Department of Protected Areas and Biodiversity have developed "Competence Standards" identifying the skills needed and the level of proficiency expected for different types of protected areas staff. This provides a framework for developing more formalized training for protected areas staff and communities involved in the co-management of new protected areas. **Existing learning institutions within Madagascar as well as specialized francophone training stations on the African mainland should be supported to provide improved training to protected areas professionals.**

Communications

Awareness about the importance of Madagascar's biodiversity is already high in the country but more can be done to maintain and improve biodiversity outreach programs. **Providing training on key issues to journalists as well as providing incentives in the form of environmental journalism prizes has been successful in the past.** Further support for such programs would help to improve the frequency and quality of reporting on environmental issues.

Other needs

The biggest challenge for conservation in Madagascar is a chronic shortage of sustainable funding to cover basic activities. National parks, reserves and species conservation programs rely almost entirely on international donor funding and are therefore regularly in crisis as donor funding cycles come to an end. Recent improvements have been made to boost tourism revenues from national parks and to establish a "Trust Fund" for protected area financing. The exact annual costs of Madagascar's protected area system are difficult to calculate precisely because there is still uncertainty about whether all of the proposed new protected areas will be included in it and there is also debate about what is necessary to achieve a basic level of effective management. The Madagascar National Parks network currently costs 5-7 million dollars per year (the variation depends on capital investment levels) and costs for the new protected areas have been estimated at an additional 10-15 million dollars per year (MacKinnon *et al.* 2009). Carbon finance is already important for many of the larger new protected areas that have been set up as REDD+ projects and there is important synergy between Madagascar's REDD+ strategy and the new protected areas, which are seen as a way of achieving reduced deforestation rates.

Further additions to the "Trust Fund" for protected areas that is managed by the Foundation for Protected Areas and Biodiversity are a priority. Currently the fund has just over 52 million dollars of firm commitments from which it expects to disperse approximately 2.5 million dollars per year, mostly to fund management of national parks. **A contribution to the Trust Fund could be made with the specific intent of providing future support to the World Heritage protected areas that receive direct support from the program.**

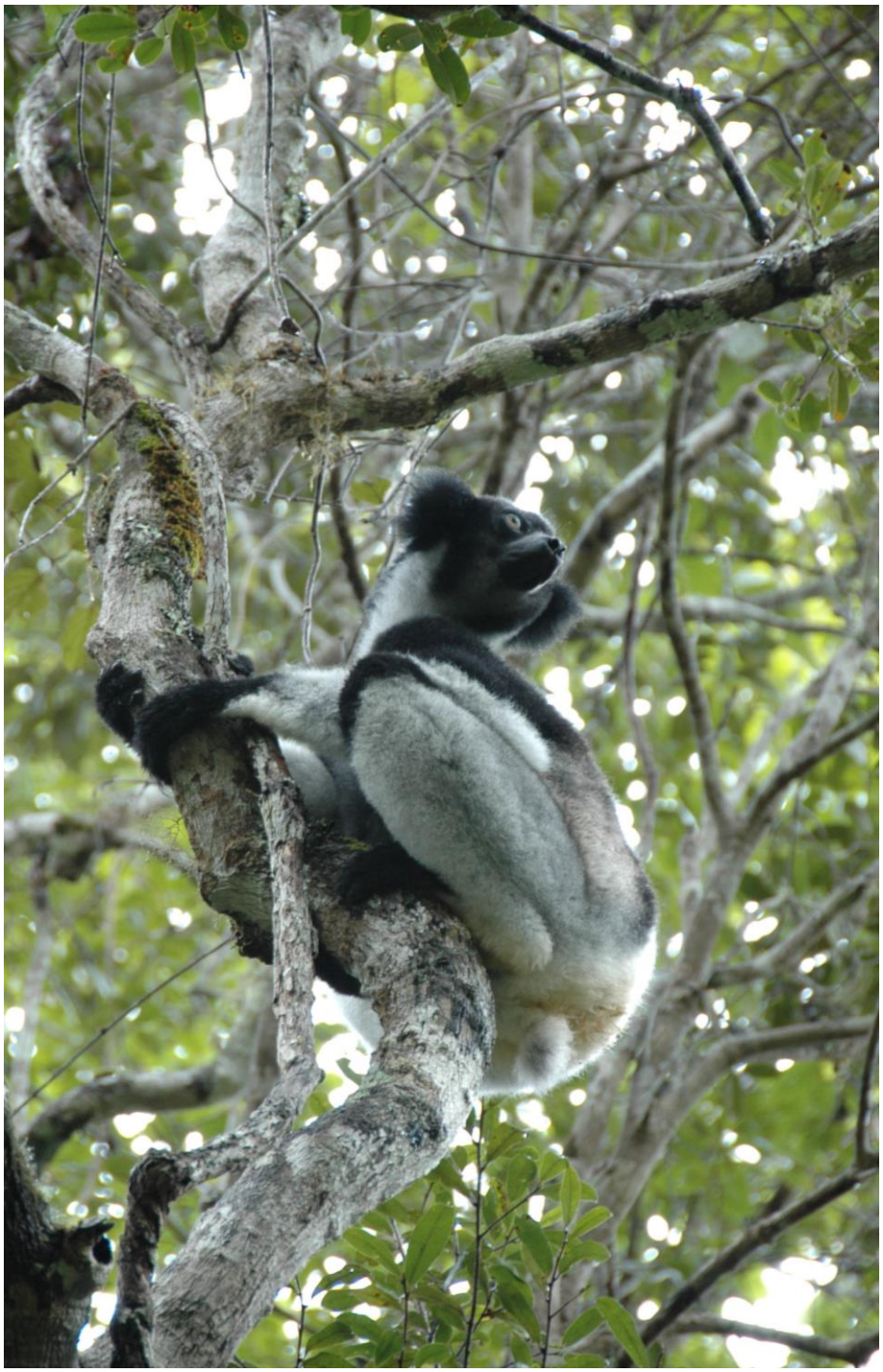


Figure 5. The Indri (Indri indri)

Is the largest of the extant lemurs of which over 100 species are recognised, making Madagascar home to about one fifth of the World's primate species.

5 SECTION 5. PRIORITIES FOR BIRD CONSERVATION

5.1 THREATS AND ISSUES FOR AFRICAN BIRDS

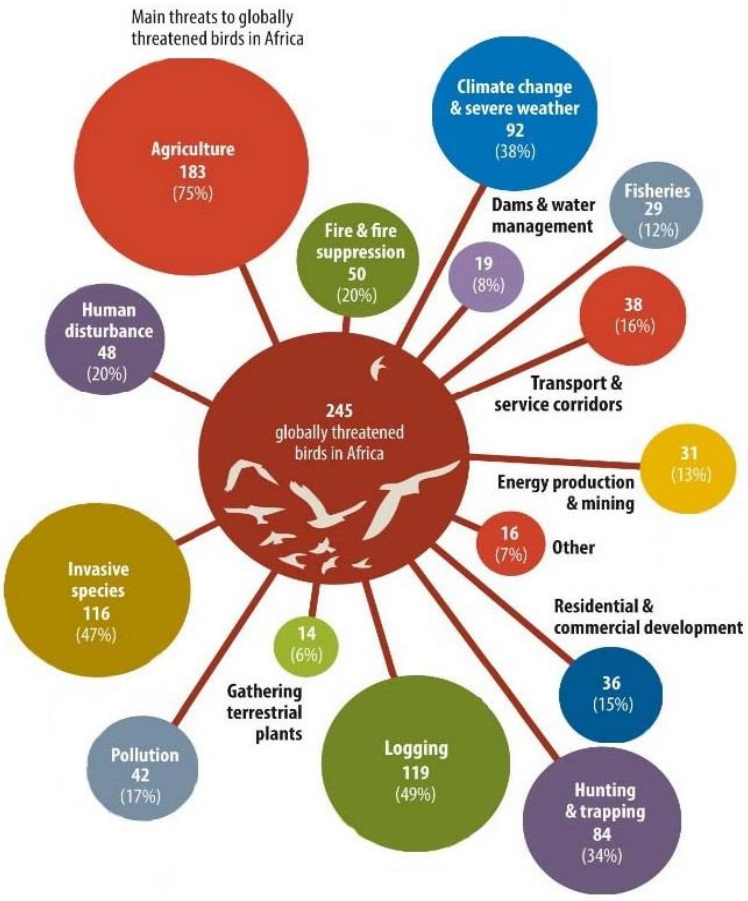


Figure 6. Main threats causing loss of birds

African birds are widely distributed (see section 5.1.3) but are faced with a wide variety of threats, the most significant being habitat fragmentation, degradation and destruction as well as direct impacts including hunting and trapping (Figure 6). Of the 2,355 bird species in Africa, 245 are classified as globally threatened. Of these, 183 (75%) are threatened by habitat clearance for agriculture. Other key threats include logging (affecting 49% of threatened species), invasive species (47%) and climate change and severe weather (38%). What is especially clear is that many of Africa's rarest species are impacted by multiple, compounding threats. Farmland species show sharper declines than non-farmland species[118].

Europeans should note that almost all their migrant birds rely on healthy wintering grounds in Africa and during their migrations the Palaearctic-African migrant birds depend also on feeding grounds in the Sahel which are being degraded by agricultural intensification. Almost all species concerned show declines.

[118] http://www.rspb.org.uk/Images/sukb2013_tcm9-358727.pdf

5.1.1 Europe's vanishing migrant birds

Over 25% of Europe's bird species, at least 2 billion 'European' birds, spend more than 50% of their year in Africa south of the Sahara. These include a wide variety of birds, swallows, waders, other waterbirds, berry and insect eating songbirds and several raptors. A high proportion of these species are experiencing precipitous population declines. This includes many species in need of special conservation measures and listed in Annex 1 of the EU Wild Birds Directive (79/409/EEC) as well as some of Europe's most widespread and popular migratory species such as the Cuckoo, Turtle Dove and Nightingale. Population declines in some species are by as much 80% in 30 years, and Europe's countryside is much the poorer for this loss. This is a painful loss for millions of EU citizens.

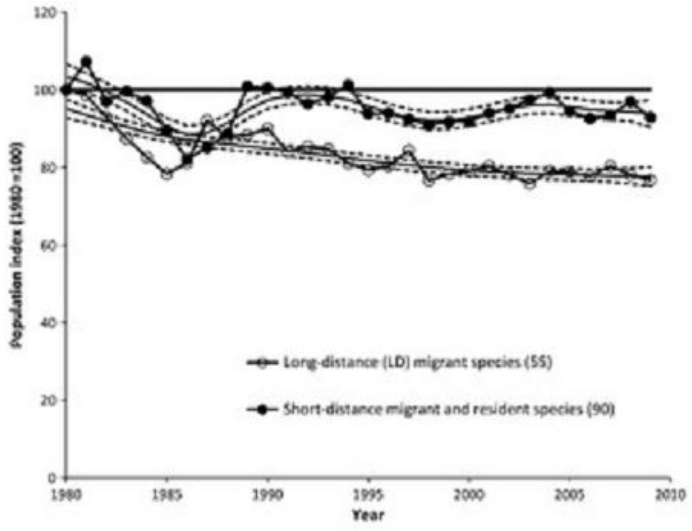


Figure 7. Declines of long distance versus short distance migrant birds

Of 119 Afro-Palaearctic long-distance migrant species (those breeding in Europe and wintering in Sub-Saharan Africa), 48 (40%) show marked declines in population. No similar pattern of decline is observed in resident and short-distance migrant species (Figure 7). Declines are associated with habitat loss and degradation, particularly in the arid and humid zones of sub-Saharan Africa e.g. Sahel. This includes degradation of grasslands and savannah forests, damming of rivers and draining of wetlands (estimated to be lost at c.1% per year)[119], and clearance of tropical forests. These threats are therefore a concern that connects countries and peoples in a very real way on both continents.

The EU financial mechanism LIFE+ helping a great deal in Europe with protection, site and habitat conservation for species covered by the EU Wild Birds Directive, but the EU is currently doing very little for the same species once they have left European territory (for up to 8 months in a year).

Such assistance could be extended by support to BirdLife International project coordinating protection of Afro-Palearctic migrants through its network of African partner organisations.

[119] Davidson, N.C. 2014. How much wetland has the world lost? Long-term and recent trends in global wetland area. Marine and Freshwater Research, 2014, 65, 934–941.

Key activities to be undertaken under this programme include:

- Improved monitoring and tracking of migrant birds
- Identification of mortality factors and causes
- Identification and protection of key wintering and stop-over sites.
- Ensuring that reforestation efforts in the Sahel under the Great Green Wall for the Sahara and the Sahel Initiative and forest zones are designed to be bird-friendly/bio-friendly
- Strengthen protection of key wetland sites used by migrant waterbirds under Ramsar Convention and Convention on Migratory Species initiatives

5.1.2 Declining Vultures

Vultures are singularly threatened. Over the past 20 years, six of the seven vultures that occur in Africa in significant numbers have become globally threatened, and the threats that have led to these declines must be tackled. These threats include: poisoning, especially in Southern and Eastern Africa, which is typically linked to large mammal poaching or human–animal conflict[120]; persecution for body parts used in traditional medicine, particularly in West Africa; large-scale habitat modification and declines in ungulate populations may play a role in some areas; and the use of veterinary diclofenac, which has caused catastrophic vulture declines in Asia (and to which there are viable, cost-effective alternatives). Actions to counteract these threats, perhaps as pilots to be followed swiftly by wider adoption, are needed over large areas of Africa.

5.1.3 Birds in wildlife traffic

Illegal trade in birds, principally African Grey Parrot, Shoebill; raptors, including vultures, cranes (e.g. Grey Crowned-crane), should also be more clearly recognized in the EU strategic approach (see section 3 of this volume), reflecting UN Environment Assembly decision 1/3[121]. In addition, many other species – particularly small colourful ones – are also threatened by illegal trade at varying scales, e.g. small seed-eating birds, lovebirds and turacos.

In addition, the strategy should flag the need to identify whether legal, but unregulated hunting of birds as bushmeat (see Volume 1 section 4.7), is having a significant impact on their populations. Where such hunting was previously for subsistence and is now for trade, and there are significant impacts on the population, more sustainable livelihood options should be explored (such as eco-tourism as a form of Payment for Ecosystem Services (see Volume 1 sections 4.3 and 5.4.4).

[120] Botha, A.J., Ogada, D.L., Virani, M.Z., 2012. Vulture Summit 2012.
[121] Decision 1/3 the UN Environment Assembly on illegal trade in wildlife prioritizes i) targeted action to eradicate supply and demand for illegal wildlife products, ii) policies of zero tolerance, including with corruption, iii) addressing the supply, transit and demand side and iv) mobilizing resources and capacity to address illegal wildlife trade. It puts a premium on countries to effectively implement their own obligations under CITES, among other international agreements and frameworks.

5.2 CURRENT CONSERVATION EFFORTS

5.2.1 Identification of EBAs and IBAs

By mapping the range overlaps of restricted range endemic birds, BirdLife International identified 26 Endemic Bird Areas (EBAs) in sub-Saharan Africa (Figure 8). These sites in total provide home for the majority of all bird species in Africa and correlate well with biodiversity priority areas for other taxa. There are, however, important threatened species that are missed by this prioritization process so the EBA approach was followed up by identification of several hundred Important Bird Areas (IBAs) (Figure 9) comprising specific habitat sites that contain one or more of all bird species designated as of global concern[122].

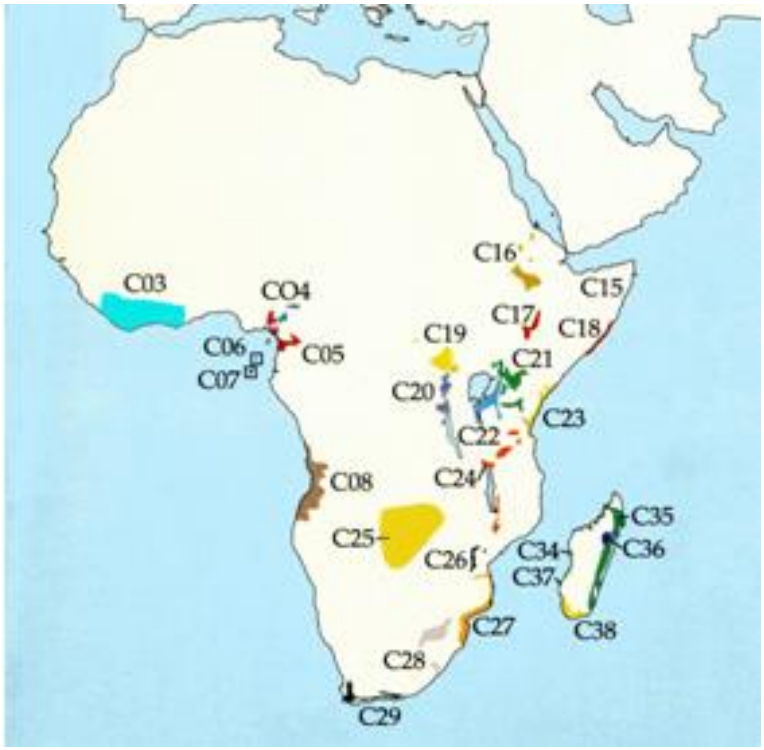


Figure 8. Distribution of EBAs

Most IBAs fall within existing national parks and game reserves and will be conserved by the KLC approach advocated in this study, but the analysis reveals where there are gaps in protected area coverage for birds and guides an ongoing programme of BirdLife International and its network of African partner organizations to seek additional protection to give more complete coverage. The bird distribution data thus assembled have also fed into the process of identifying biodiversity 'hotspots' and also in the analyses of Alliance for Zero Extinction (AZE).

[122] www.birdlife.org/datazone/userfiles/file/sowb/pubs/State_of_Africas_Birds_report_2013_(FINAL).pdf

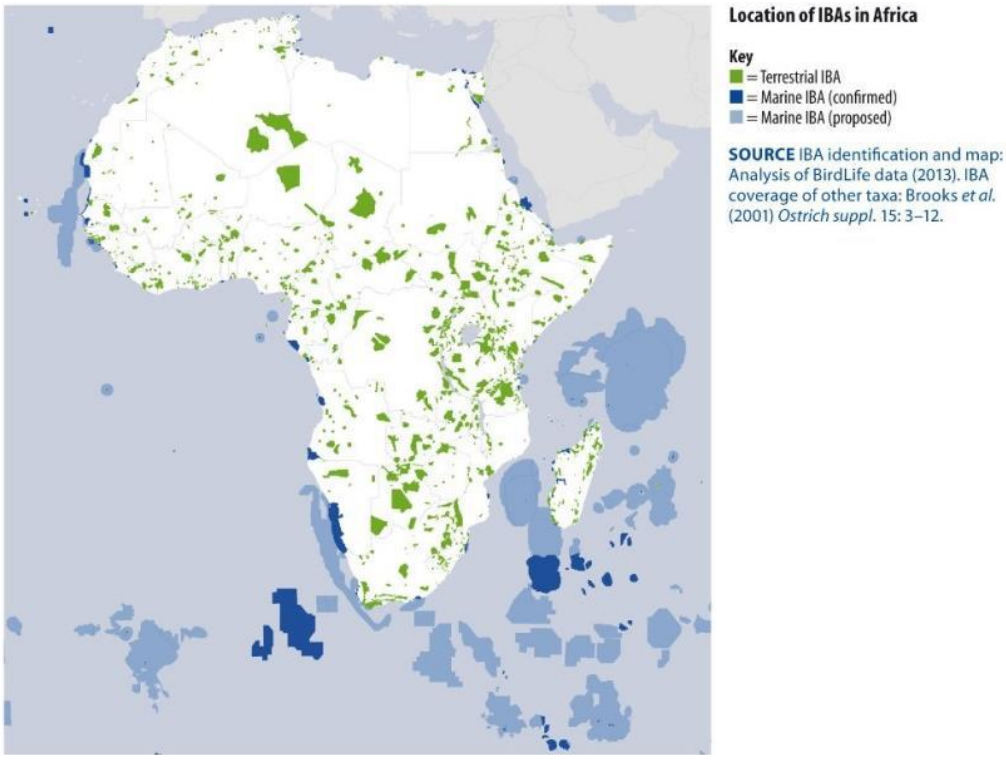


Figure 9. 1,238 IBAs identified in Africa

BirdLife International's Important Bird and Biodiversity Areas (IBAs) are sites of particular significance for the conservation of the world's birds and, because of the way much biodiversity is distributed, collectively these sites also hold many priority species of other animals and plants. Over the past 21 years 1,238 IBAs have been identified, documented and mapped in Africa by the BirdLife Africa Partnership, using a set of standardised, globally applicable and scientifically defensible criteria (Figure 9). IBAs represent by far the most comprehensive science-based effort to identify the Africa's key sites for biodiversity conservation and span all the continent's biomes and cultures.

The IBA programme provides the growing BirdLife Partnership in Africa in 24 countries with a focus for conservation action, planning and advocacy. In Africa, BirdLife works for the conservation of IBAs through collaborations with government and financial institutions, civil society organisations, the private sector, research institutions, local groups and individuals. The programme provides a particular focus for the design and implementation of protected area networks, for safeguarding priority sites alongside investment by financial institutions and the private sector, and for monitoring the effectiveness of regional efforts to conserve biodiversity.

5.2.2 EU concern for African Birds

EU Member States have long recognised that migratory birds do not recognise political boundaries and that there is a need for coordinated Community action. This led to the adoption of the EU Birds Directive which gives particular attention to conservation measures for migratory birds, the implementation of which is now financed through LIFE + Whilst LIFE + has resourced the recovery of some of Europe's most threatened species, financing is almost entirely focussed on actions in the EU. Once Europe's migratory birds leave European territory there is only very limited action that the EU is currently taking for their conservation in Africa.

A majority of EU Member States, as well as the EU, are parties to a number of international conservation agreements which are of great importance for migratory birds in Africa. These include the Ramsar Convention on Wetlands, and the Convention on Migratory Species (CMS) and its sister agreements for African-Eurasian Waterbirds (AEWA) and Raptors (Raptor MOU). A CMS-led Land Bird Action Plan is currently under development. Whilst Member States and the EU provide strong political support for these agreements, only very limited resources are committed for their effective implementation in Africa.

Europe is blessed by many leading international non-governmental organisations who are working for the conservation of migratory birds in Africa. This include the BirdLife International Partnership, which brings together over 20 leading national organisations in the EU and Africa, Wetlands International, and IUCN, as well as leading research institutions and many universities. These organisations have made good progress in the identification of key site and key habitats, including for example through BirdLife's IBA programme, and the identification of the critical site network for waterbirds under AEWA. European institutions are in an excellent position to capitalise on the additional resources that are needed to reverse the declines in Europe's migratory birds. The EU and EU Member States are also a major donor to Sub-Saharan Africa and, alongside development gains, there are likely to be opportunities to also secure benefits for migratory birds, such as in efforts to combat desertification. There is also the need to ensure EU financial assistance to Africa is not to the significant detriment of Europe's migratory birds.

5.3 INDICATIVE ACTIONS RECOMMENDED FOR EU INTERVENTION

5.3.1 Synergy between development and environment agendas

Given the importance of Africa for European birds, it is recommended that the EU explores synergies between its development and environment agendas as they relate to Africa, and develops a consolidated plan of action for the Conservation of Migratory Birds in Africa. It is recommended that EU actions, inter alia, include the following aspects:

1. Increases support for the Ramsar and Migratory Species Conventions, and especially for the implementation of CMS programmes for waterbirds (AEWA), raptors (birds of prey) (Raptor MOU) and landbirds, so that they are enabled to take more concerted action for migratory bird conservation in Africa;

2. Gives particular impetus to the development and implementation of the CMS Land Bird Action Plan action plan, since this is of particular relevance to those migratory species that are experiencing the steepest population declines;

3. Puts in place an equivalent financing mechanism to LIFE+ to resource urgent conservation actions for migratory species in Africa, and establishes framework agreements of cooperation and support to Europe's leading NGOs and research institutions working for migratory bird conservation;

4. Undertakes an audit of EU development assistance to Africa to identify where positive synergies might exist to advance development and conserve Europe's migratory birds, particular in relation to efforts to combat desertification and woodland/forest degradation in the Sahel and Guinea Savanna zones;

5. Ensures safeguards are in place, and environmental audits are undertaken, for major EU development assistance in agriculture, forestry and fisheries, to guard against EU funding having a major negative impact on Europe's migratory birds

Specifically, types of actions that might be supported in relation to ***key sites and for key habitats*** for migratory birds, include:

5.3.2 Key Sites and habitats

Types of actions that might be supported in relation to ***key sites and for key habitats*** for migratory birds, include:

Drylands

- Sustainable small-scale agriculture and woodland management, zonation of grazing, and alternative income generation including habitat restoration, improving both human livelihoods and the quality of habitat for migratory landbird species;

- Reducing dependence on wood fuel, through policies and by supporting initiatives that promote, and make available, alternative renewable sources of energy for heating, lighting and cooking;

- Encouraging the use of indigenous trees or other plants that are of high value to migratory landbird species in appropriate afforestation or re-afforestation initiatives.

- Facilitating the sharing of relevant pastoralist and small-scale agricultural experiences and good practices, which employ land-use systems that are ecologically sustainable and support populations of migratory landbird species;

- Promoting agricultural policies that support participatory, sustainable natural resource management practices, e.g. small-scale agriculture and traditional farming methods (including pastoralism), including the promotion of appropriate measures within agro-environment schemes and the removal of perverse incentives and subsidies, where these exist;

- Support for existing large, dryland protected areas, especially in the Sahel and Guinea Savannah zones.

Wetlands

- Mitigating effects of existing hydro-dams by allowing well-managed, artificial discharge/flooding downstream, which can be an effective way of restoring floodplain habitats (including flood forests, where necessary aided by replanting/regeneration, which also act as a spawning ground for fish) and local livelihoods such as rice and arable cultures.

- Ensuring that planned new hydropower reservoirs and other schemes modifying natural hydrology are subject to rigorous Environmental Impact Assessments to ensure that their design mitigates any harm to, and maximises the potential for environmental benefits for, migratory species and their habitats.

- Promoting participatory approaches in the planning, management and conservation of sites, so as to enable the engagement of, and benefit-sharing with, local communities where these are present.

- Supporting existing large wetland protected areas, especially in the Sahel and Guinea Savannah zones. Worldwide, better protection of wetlands for water birds has proved immensely successful.

Research (see Volume 1 section 5.6.4)

- Establishing population models, diagnose the causes of population changes and undertake targeted ecological studies of selected 'indicator species'.

- Supporting researchers and research institutions to focus on the most important and urgent issues for migratory bird conservation including through disseminating priority research needs, analysing existing data sets, establishing research consortia to address key conservation issues and identifying and supporting the development and geographical expansion of sub-regional research institutes.

- Ensure that the connectivity needs of IBAs are assessed, prioritised and addressed for Europe's migratory birds and support flyway-scale interventions.

- Support for BirdLife's monitoring of IBAs as an early-warning system and to aid government to meet national and international obligations, plus documentation and dissemination of IBA information (including revision and update of regional IBA directory).

Support to growing network of Local Bird Conservation Groups

- Support for a BirdLife Africa-wide programme for Local Conservation Groups (LCG), including livelihood improvement, through the sustainable use of natural resources and biodiversity.

Interest in birds can facilitate the emergence of domestic conservation initiatives across Africa. For instance BirdLife's Local Conservation Group (LCG) approach under the Local Empowerment Programme is seeking to conserve IBAs by empowering people and improving local livelihoods. Over 400 LCGs have been established in diverse communities in and around IBAs across Africa, fostering local participation in conservation, with benefits for birds, other biodiversity and the people who depend on the sites (Figure 10). Increased EU support would go a long way towards tackling one of the main drivers identified for declining wildlife, namely lack of awareness (see Volume 1 section 2.4.4).

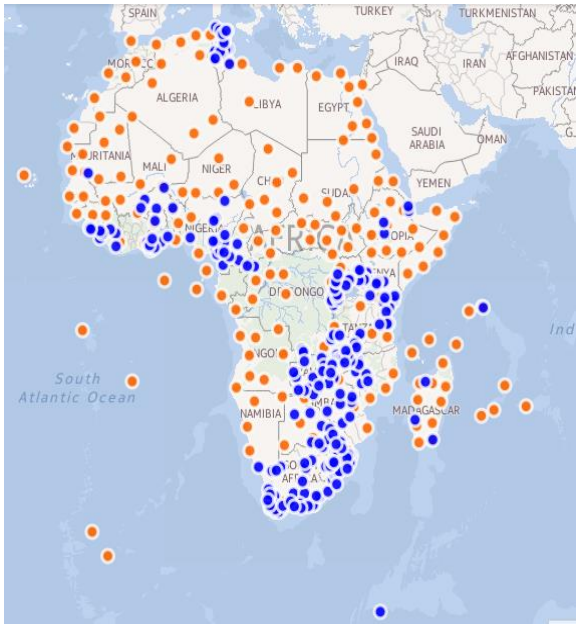


Figure 10. Location of more than 400 IBAs with Local Conservation Groups (shown in blue)

Figure 11. Location of the 75 IBAs in danger in Africa (Source: BirdLife International)

Whilst IBA Programme has contributed significantly to the conservation of sites across the region, there remain considerable gaps in its local-to-regional scale effectiveness. Only 749 (60%) out of 1,230 IBAs in Africa have some form of legal protection. The rest are unprotected. BirdLife has been working with the Secretariat of Convention on Biological Diversity (CBD) to encourage national governments to consider IBAs as they seek to fulfil their obligations under the CBD's Strategic Plan for Biodiversity 2011–2020, particularly Aichi Target 11 that calls for the expansion of the global protected area network to at least 17% of terrestrial and inland water, and 10% of coastal and marine.

The importance of the regular monitoring of IBAs has been highlighted by recent field observations. Analysis of monitoring data has revealed that many IBAs are in a poor state, with some seriously affected by damaging developments. As part of a global initiative called 'IBAs in Danger', the threat information from IBAs provided in early 2013 by the BirdLife Africa Partnership identified an initial list of 75 IBAs at extreme risk of losing their biodiversity value if the threats they face are not quickly addressed (Figure 11).

6 ANNEXE. NOTES ON DISTRIBUTION AND STATUS OF OTHER TAXA

6.1 INTRODUCTION

The distribution of African species is far from even. There are important concentrations, or overlaps of species distributions, in key areas. Habitat suitability is governed by vegetation type (Figure 12), itself largely governed by climate and landform. Evergreen forests occur in the Congo basin, southern fringes of West Africa, east coast of Madagascar and on some of the higher isolated mountain ranges of the continent. Deserts cover much of northern Africa and the cold Benguela current creates coastal deserts in SW Africa. Savanna grasslands with scattered small trees cover large areas of semi-arid West, Eastern and Southern Africa, whilst woodlands form a transition ring between the evergreen forests and savannas. The fynbos heathland, part of the uniquely rich Cape flora, occurs in the Western Cape of South Africa with its Mediterranean climate and Alpine vegetation occurs on some of the Afromontane regions on high mountains.

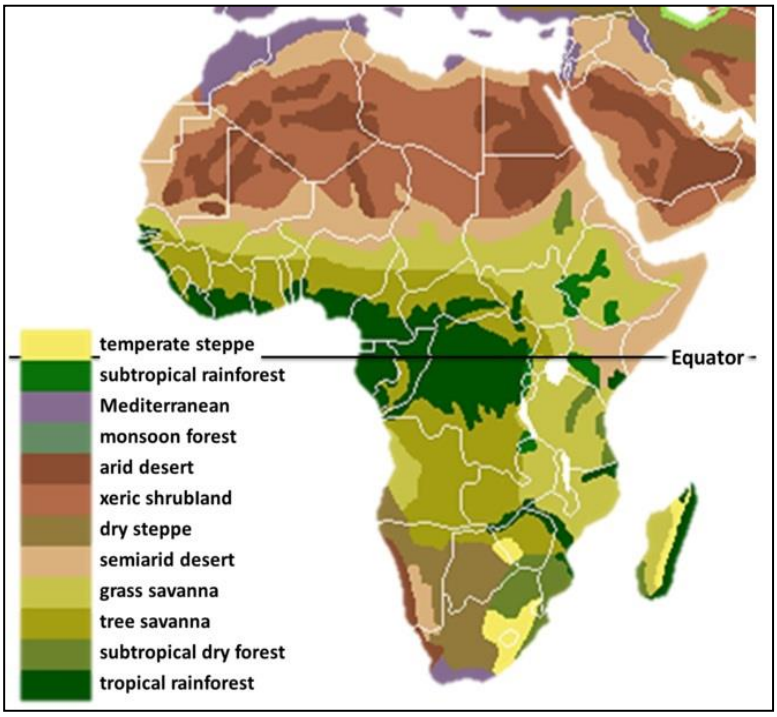


Figure 12. Vegetation zones

Rivers, lakes, estuaries and coasts form important wetlands. Wetlands offer additional unique faunal treasures – millions of pink flamingos, homes for millions of other waterfowl, dry season watering areas vital for savanna fauna, almost two thousand species of endemic fish and vital oases in desert regions. These wetlands serve as water sources on which the lives of millions of humans and their herds also depend (see Figure 13).

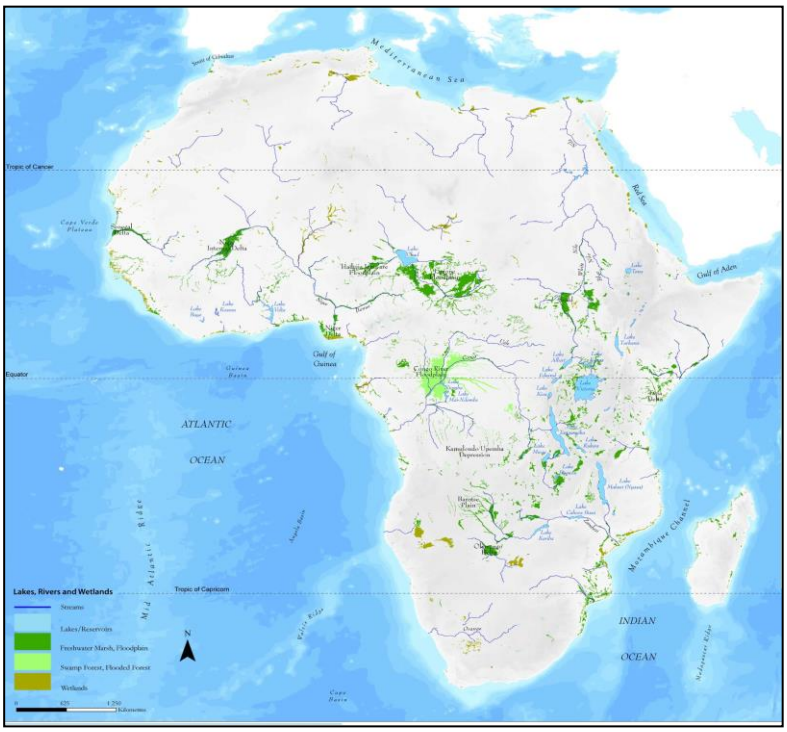


Figure 13. Wetlands of Africa

6.2 DISTRIBUTION OF PLANTS

Plant species richness is at its highest in mineral-poor environments on old or leached soils such as the semi-arid fynbos and in some tropical rain forests. Richness declines with aridity and is lowest in desert regions and high mountains. Highest densities are found in Madagascar, the Albertine rift and Pleistocene refugia of Guinean forests, the Nigerian-Cameroon borders and Western Congolese lowlands. A further complication is recognised when we examine the species composition of these different vegetation formations. Patterns of floral richness and species distribution prompted White[123] to define a number of phytochoria or floristic regions defined by regions of local endemism or centres of plant radiation. White also mapped floral transition zones between these principle phytochoria. Davis et al.[124] narrow down these centres of plant diversity in their global treatment (Figure 14).

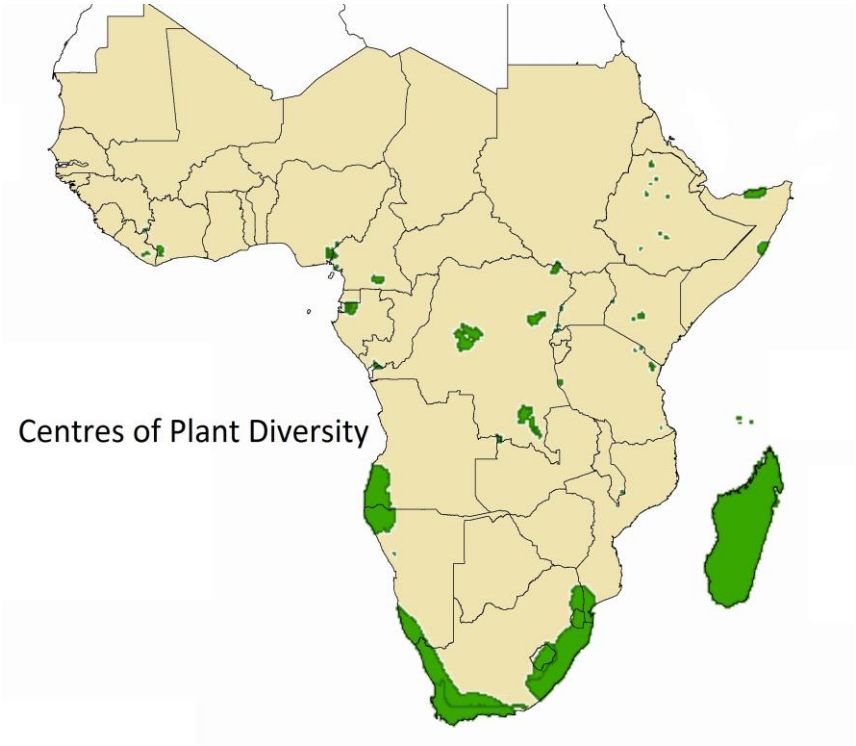


Figure 14. Fifteen Centres of plant diversity in Africa (from Davis et al.)

[123] White 1983
[124] Davis et al. 1995,1996,1997

6.3 DISTRIBUTION OF MAMMALS

The EU funded African Mammals Databank (AMD) project has mapped and analysed the distribution of all mammals species. Overlay of all species maps give a good picture of spatial richness (Figure 15), revealing the high richness of species living in the savanna regions. If we limit the analysis to primates, however, we see a different pattern favouring the moister and forested regions of the continent (Figure 16).

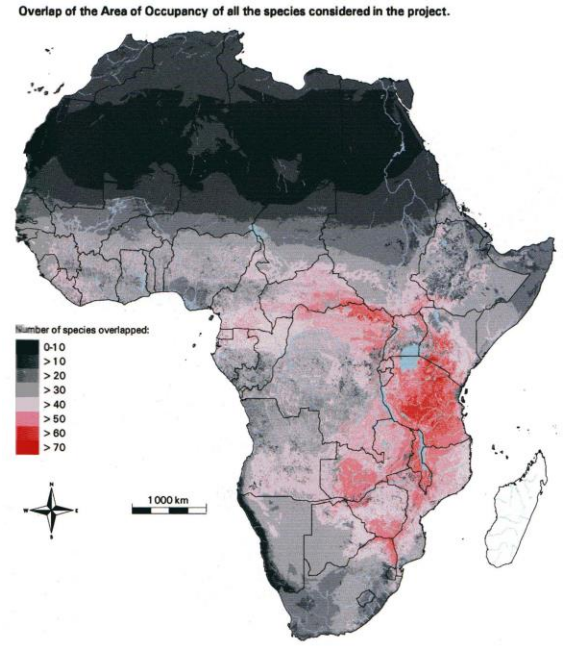


Figure 15. Species richness of all mammals

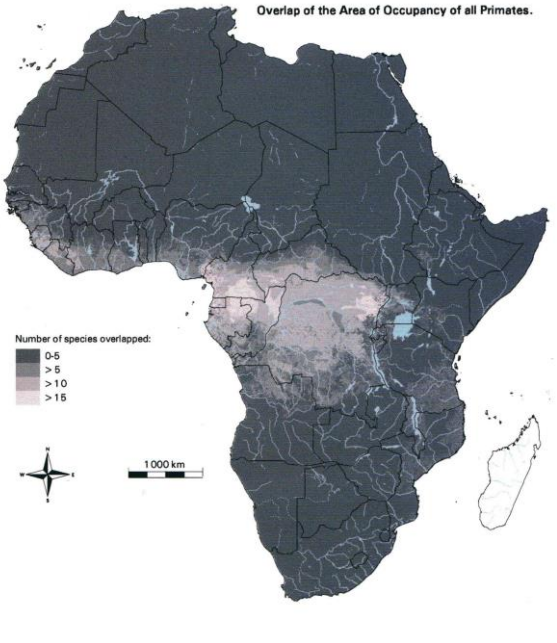


Figure 16. Species richness of primates

6.4 DISTRIBUTION OF BIRDS

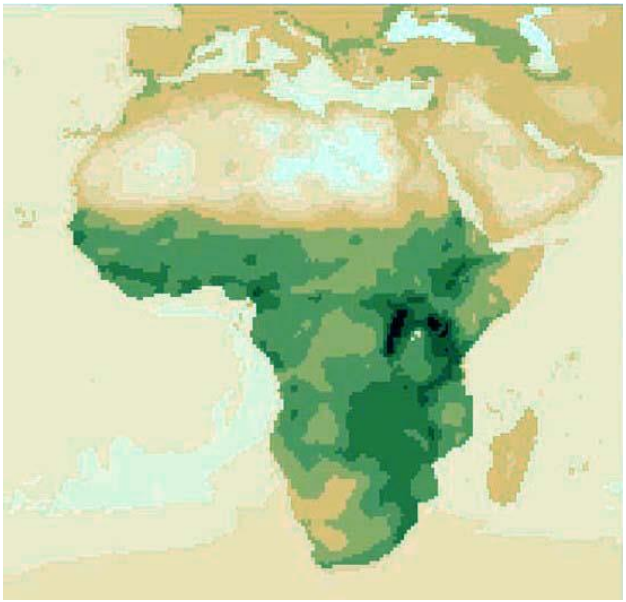
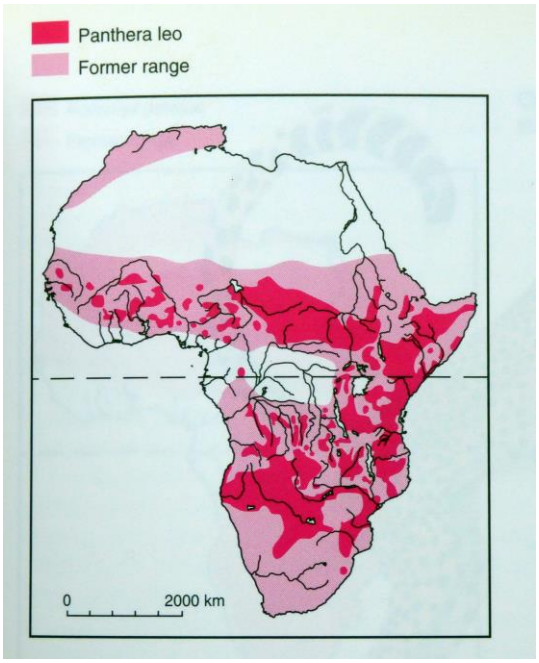


Figure 17. Bird richness (Source: BirdLife International)

Birds constitute important wildlife in their own right as controllers of insect pests, distributers of seeds, pollinators of flowers, scavengers and raptors. But they are also one of the best indicators of overall biodiversity, occurring in all habitats. Because they are mostly diurnal, can be readily identified at a distance and there are thousands of avid birdwatchers recording data, they are also the best spatial dataset available of any taxon with different specialists in all vegetation types of the continent. Bird species richness is high in all forest, woodland and savanna regions and less rich in deserts. There are sites of highest density in the forests of the Albertine Rift and forested mountains of East Africa (Figure 17).

6.5 LION - KING OF THE BEASTS

Africa without lions is almost unimaginable but over the last two decades, Africa has lost between 30 and 50% of its lions and today the number may be as low as 32,000 animals. In West Africa the situation is especially desperate. Latest surveys by Panthera over 17 countries for 6 years indicates that the total West African population may be as low as 400 and from a known occurrence in 21 protected areas in 2005, lions are confirmed in only 4 sites today (Figure 19). Lions now roam in just 1.1% of their historic range in West Africa and are extinct in all of their former range in northern Africa (Figure 18).



As Panthera expert Mr Henschel puts it "Our results came as a complete shock; all but a few of the areas we surveyed were basically paper parks, having neither management budgets nor patrol staff, and had lost all their lions and other iconic large mammals."

Figure 18. Shrinking range of lion (Source: Kingdon 1997)

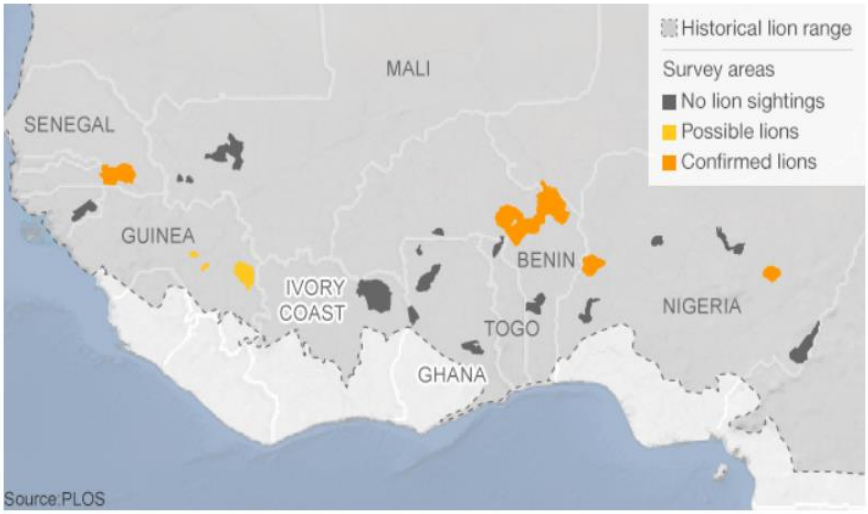


Figure 19. Remaining lion populations in West Africa (Source Panthera)

The lion's hunting grounds have been converted to agricultural land, and farmers use poisons, rifles and snares to remove predators from their land. Prey species have been depleted, populations have become fragmented. In some countries it is still legal to shoot lions for 'sport', which though distasteful to many people, can form part of an effective conservation management policy.

Saving this emblematic species, which serves as a prime viewing target for tourists to many Africa countries, requires protection of extensive landscapes where natural prey are plentiful combined with collaborating with local farmers and herdsmen to reduce wildlife conflicts and let them benefit from a fair share of tourism revenues.

6.6 OTHER LARGE CARNIVORES

Other large carnivores are also facing difficulties due to loss of habitat, loss of game and deliberate poisoning. Two formerly widespread species of special concern are cheetah and hunting dogs. These species share similar habitat needs and are have a common survival strategy action plan.[125] Figures 20 and 21 demonstrate their respective reduced ranges.

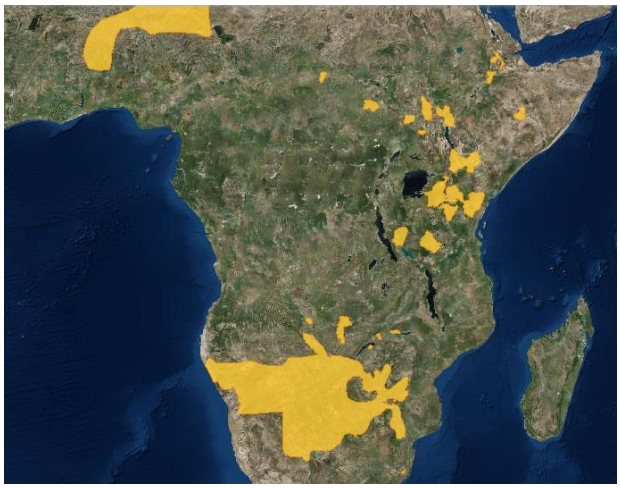


Figure 21. Remaining range of African cheetah

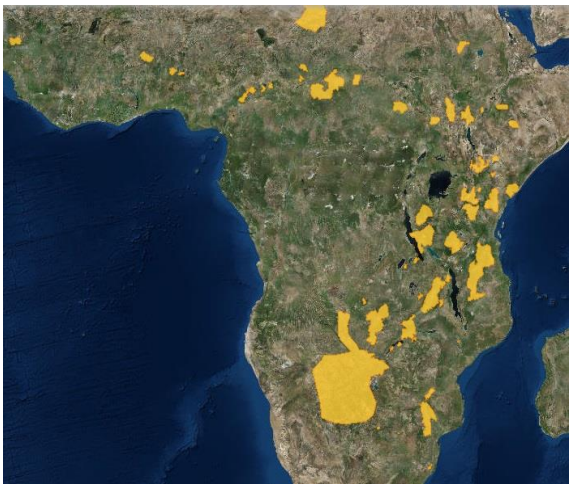
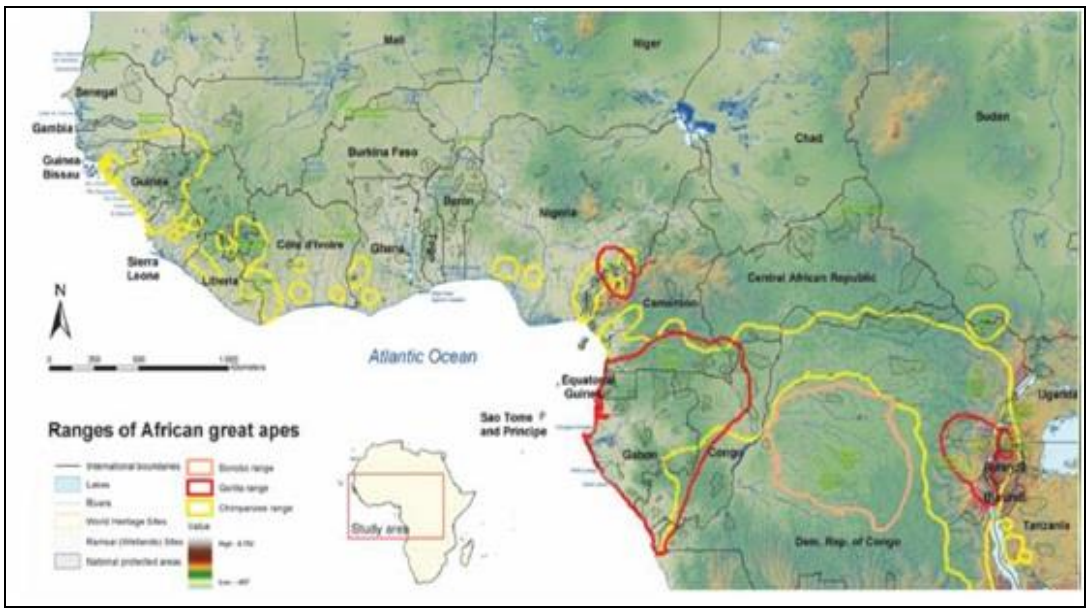


Figure 20. Remaining range of Hunting dog

[125] IUCN/SSC. 2007. Regional conservation strategy for the cheetah and African wild dog in Southern Africa

6.7 AFRICAN GREAT APES

One group of particular concern are the great apes – Man's nearest living relatives. These sensitive and intelligent creatures are becoming increasingly endangered by bush-meat trade, deforestation, pet trade and human diseases. All are endangered and survival is realistic in only a few key localities of west and central Africa (Figure 22).

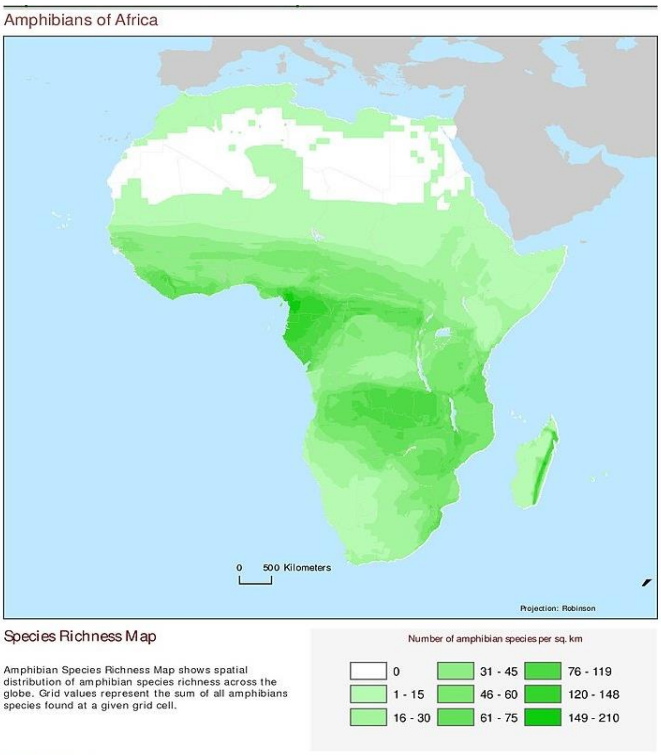


Source: Great Ape & logging, Arnold van Kreveld and Ingrid Roerhorst (Ulucus Consultants), WWF, 2008

Figure 22. Distribution of African Great Apes

6.8 DISTRIBUTION OF FISH AND AMPHIBIA

Figure 23. Amphibian Richness



Aquatic species, such as amphibians (Figure 23) and fish, are limited to the wetlands regions of Africa. Many former lakes are drying up. Other wetlands are becoming polluted or modified by introduced species. The strange shape of the complex Niger river system of W Africa and large number of separate small rivers feeding into the mangroves and coastal waters of the Guinea Gulf results in a high density of fish species in that region (Figure 24). The Great Rift Lakes of Tanganyika and Malawi bear witness to an amazing radiation of cichlid fish with respectively 250 and one thousand endemic species. Africa's freshwater fish richness is second only to S America and almost totally endemic. These species are vital for the functioning of freshwater ecosystems and of

huge economic importance. Many millions of people rely on freshwater fish for food and income and many species of perch and tilapia have become globally important commercial species. 28% of Africa's freshwater fish species are listed as endangered. Main causes are shrinkage of lakes, pollution of waterways, invasive plants such as Water Hyacinth, overfishing and introduction of alien fish species.

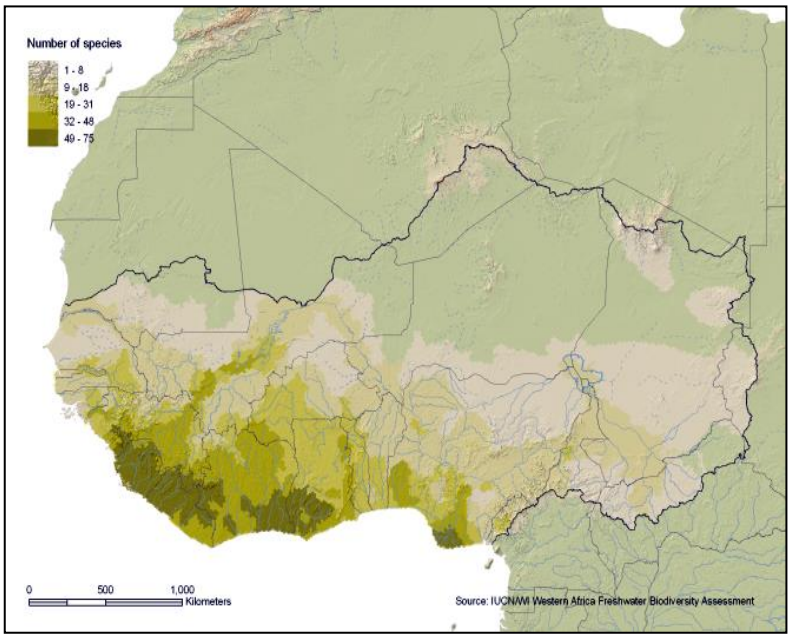


Figure 24. Fish richness in West Africa

6.9 DISTRIBUTION OF INSECTS

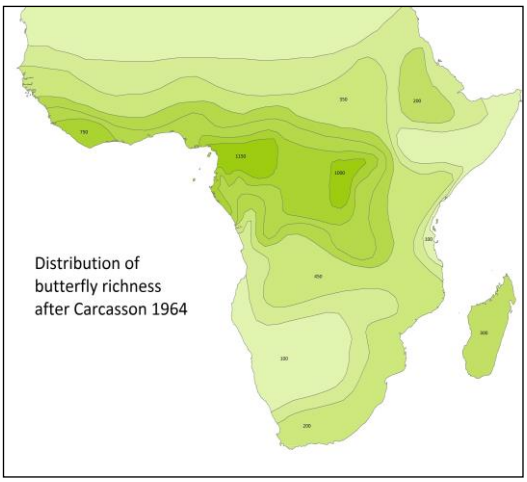


Figure 26. Butterfly richness

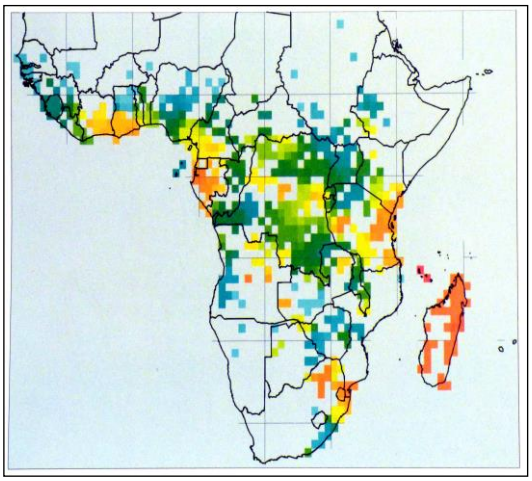


Figure 25. Graphium richness

Butterflies are one of the best indicators of insect diversity in Africa. In general their distribution pattern follows plant richness but not exactly since they do not have a one to one relationship with plant hosts as most butterfly species larvae can feed on a variety of different plants. Overall richness of butterflies was defined by Carcasson[126](Figure 25). More up to date and complete data are available for some genera such as kite

[126] Carcasson 1964

swallowtails (*Graphium* spp)[127] (Figure 26). Figure 27 analyses this distribution and leads to identification of key regions for their conservation. These priority areas show similar patterns to key areas also identified for vertebrates under the Alliance for Zero Extinction programme (AZE) and identified for plant conservation.

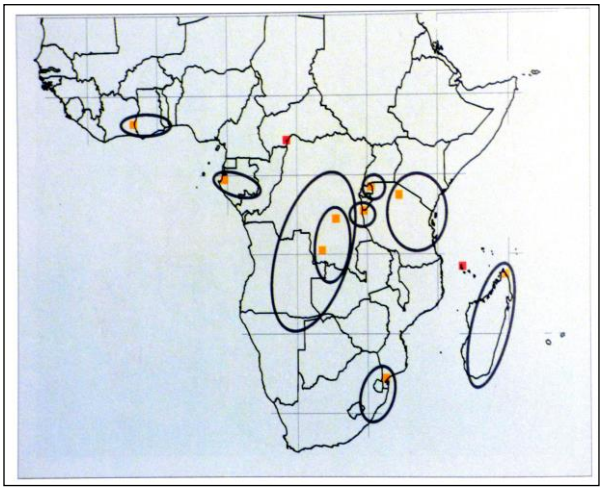


Figure 27. Priority areas for swallowtails

6.10 PRIORITIZING SITES FOR CONSERVATION

A first approach might be to try to protect representative sites in each of the main ecosystems. At the first level we can classify the vegetation into principle biomes or habitat types – lowland humid forests, savannah grasslands, deserts, wetlands etc. The vegetation map of Africa closely follows patterns of landform and climate. Different faunal species are associated with a range of such habitat types.

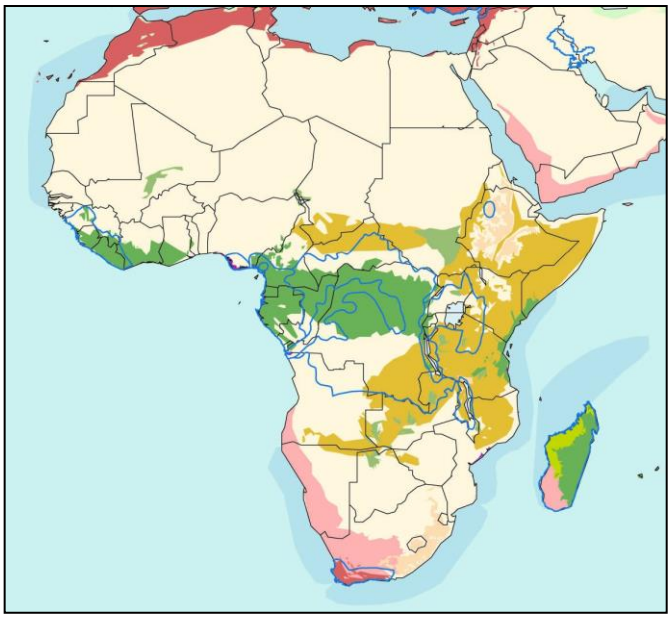


Figure 28. Global 200 Ecoregions of sub-Saharan Africa

[127] Smith & Vane-Wright 2001

By overlaying information of distinct landform units and species distributions and centres of endemism, biogeographers have tried to classify Africa into a large number of different eco-regions. [128] Ideally we should try to conserve representative ecosystems in each of these 103 different ecoregions. However, it is clear that some ecoregions are far more distinctive or bio-rich than others, so a more pragmatic approach is taken by the Global 200 programme of WWF. This initiative has selected the most important ecoregions or combinations of ecoregions to identify a core set of regions that in total could conserve a high proportion of all species globally. There are 14 such global 200 terrestrial ecoregions recognised for sub-Saharan Africa (Figure 28). Additional regions are identified as wetland priorities and marine priority areas.

6.10.1 Biodiversity hotspots Approach

Biodiversity Hotspots are regions of high biodiversity value combined with high levels of threat (Figure 29). They constitute biogeographically similar aggregations of ecoregions holding at least 0.5% of the world's plants as endemics, and with at least 70% of primary habitat already lost[129]. The approach is useful in identifying regions where conservation actions are most urgently needed to prevent major losses of key species.

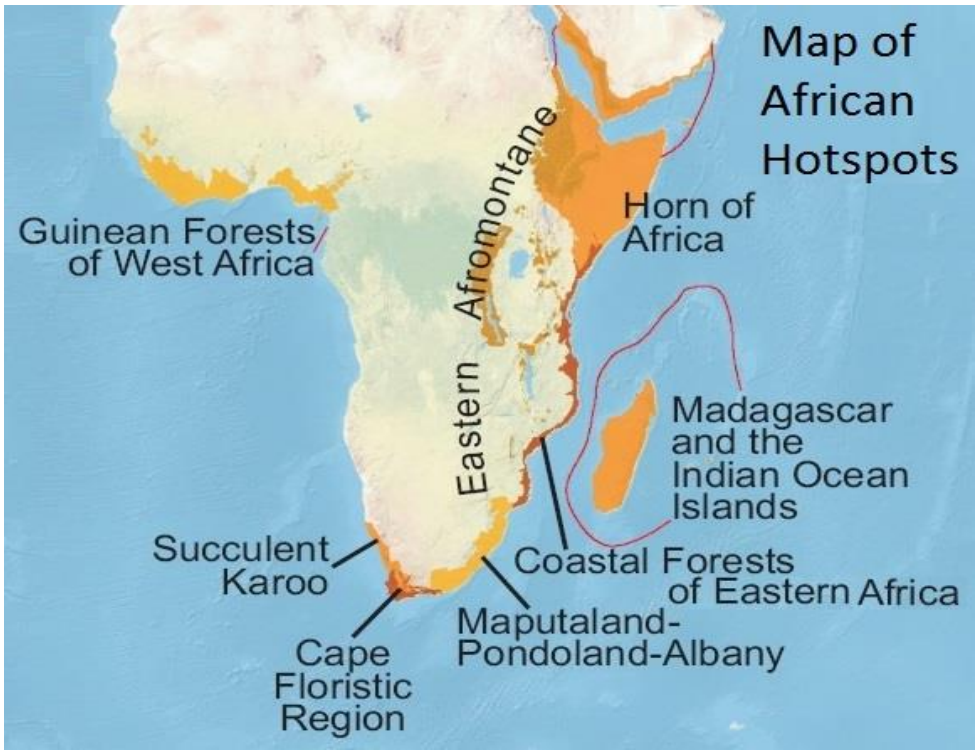


Figure 29. Distribution of African Hotspots

List of African Hotspots:

- Cape Floristic Region. Evergreen fire-dependent shrublands characterize the landscape of the Cape Floristic Region.
- Coastal Forests of Eastern Africa. Though tiny and fragmented, the forest remnants that make up the Coastal Forests of Eastern Africa contain remarkable levels of biodiversity.

[128] Udvardy 1975; Olson and Dinerstein 1998 and 2002, Olson et al. 2000
[129] Myers et al. 2000, Mittermeier et al. 2004

- Eastern Afromontane. The mountains of the Eastern Afromontane hotspot are scattered along the eastern edge of Africa, from Saudi Arabia in the north to Zimbabwe in the south.
- Guinean Forests of Western Africa. The lowland forests of West Africa are home to more than a quarter of Africa's mammals, including more than 20 species of primates.
- Horn of Africa. The arid Horn of Africa has been a renowned source of biological resources for thousands of years.
- Madagascar & the Indian Ocean Islands. Madagascar and its neighboring island groups have an astounding total of eight plant families, four bird families, and five primate families that live nowhere else on Earth.
- Maputoland-Pondoland-Albany. The region stretches along the east coast of southern Africa below the Great Escarpment, is an important center of plant endemism.
- Succulent Karoo. The Succulent Karoo of South Africa and Namibia boasts the richest succulent flora on earth, as well as remarkable endemism in plants.

6.10.2 Sites of biological irreplaceability

Figure 30. Sites of biological irreplaceability in Africa

As part of the Alliance for Zero Extinction programme (AZE), the irreplaceability of each of the world's 173,461 designated PAs, and of 2059 proposed sites was estimated, in terms of ensuring representation of 21,419 vertebrate species (including all amphibians, non-marine mammals, and birds, of which 4329 are globally threatened). Sites identified as vital for minimizing species extinctions in Africa are shown in Figure 30. Overlay of the most irreplaceable sites with existing World Heritage sites are shown in Figure 31[130]. The results show that

[130] Le Saout et al. (2013)

only a few of the sites overlap but they recommend that the World Heritage programme uses the map of irreplaceability as a guide for the selection of additional sites of outstanding global biodiversity value.
These various approaches all throw up priority areas. Some overlap and come up under all approaches. Others are missed by one approach but highlighted by another. The Central African rainforests are not identified as a hotspot and yet these are critical for three great apes, contain almost all of Africa's forest elephants and many other endemic species. Omitting this as a priority would be very negative. Also all these approaches are based on presence of species rather than delivery of valued ecological services. Efforts to identify priorities for conservation based on economic importance and ecosystem services put more emphasis on wetlands, coastal areas and humid forests.

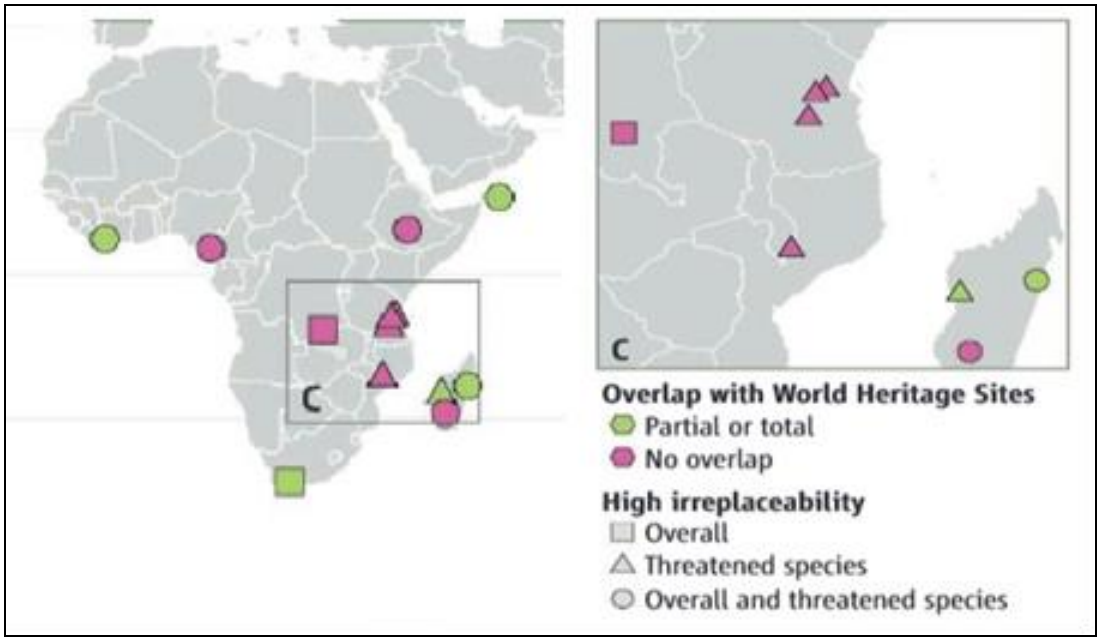


Figure 31. Overlap of the most irreplaceable sites with the WH sites.

We conclude that African wildlife cannot be saved in a small or narrow range of sites and will require major investments across many sites and landscapes over most of the continent.

6.11 HOW CAN EU ASSIST CONSERVATION OF LESS PROFILED TAXA?

The EU does not have the administrative or supervisory capacity to implement hundreds of individual projects across Africa. However, the EU does have strong ability to fund actions under implementation of other agencies and NGOs.
The Species Survival Commission of IUCN comprises a number of specialised working groups focused on assessing status and conservation needs of their particular taxonomic group (such as the Antelope Specialist Group and the Cat Specialist Group) or conservation issues (such as the Climate Change Specialist Group and the Sustainable Use and Livelihoods Specialist Group). Several well designed and highly relevant strategies in urgent need of implementation include:
IUCN & ICCN. 2012. Bonobo (*Pan paniscus*): Conservation Strategy 2012–2022.
IUCN / SSC Canid Specialist Group. 2011. Strategic Plan for Ethiopian Wolf Conservation
IUCN SSC Cat Specialist Group. 2006. Conservation Strategy for the Lion in Eastern and Southern Africa
IUCN SSC Cat Specialist Group. 2006. Conservation Strategy for the Lion in West and Central Africa
IUCN. 2005. Central African Elephant Conservation Strategy

IUCN 2005. Strategy for the Conservation of West African Elephants (2005)
IUCN 2005. Southern Africa Regional Elephant Conservation and Management Strategy (2005)
IUCN/SSC. 2007. Regional Conservation Strategy for the Cheetah and African Wild Dog in Eastern Africa
IUCN/SSC. 2007. Regional conservation strategy for the cheetah and African wild dog in Southern Africa
Maldonado et al. 2012. Grauer's Gorillas and Chimpanzees in Eastern Democratic Republic of Congo (Kahuzi-Biega, Maiko, Tayna and Itombwe Landscape): Conservation Action Plan 2012–2022.
Mallon et al. 2011. Conservation Strategy for the Pygmy Hippopotamus.
Morgan et al. 2011. Regional Action Plan for the Conservation of the Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*)
Plumptre et al. 2010. Eastern Chimpanzee: Status Survey and Conservation Action Plan 2012-2020
Schwitzer et al 2013. Lemurs of Madagascar: A Strategy for their Conservation 2013–2016.
Strategic plan for the Okapi, produced by the Giraffe and Okapi Specialist Group, to be published in 2014.
A full list of earlier action plans is available:
http://cms.iucn.org/about/work/programmes/species/publications/species_actions_plans/