

STATUS OF ELEPHANT POPULATIONS, LEVELS OF ILLEGAL KILLING AND THE TRADE IN IVORY: A REPORT TO THE CITES STANDING COMMITTEE

Introduction

Resolution Conf. 10.10 (Rev. CoP17) on *Trade in elephant specimens*, in paragraph 11, directs the Secretariat, pending the necessary external funding, to: (a) report on information and analyses provided by MIKE [by the CITES Secretariat] and ETIS [by TRAFFIC]..., subject to the availability of adequate new MIKE or ETIS data, at relevant meetings of the Standing Committee; and (b) prior to relevant meetings of the Standing Committee, invite the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) to provide an overview of trade in elephant specimens as recorded in the CITES database; the IUCN Species Survival Commission (IUCN/SSC) African and Asian Elephant Specialist Groups to submit any new and relevant information on the conservation status of elephants, pertinent conservation actions and management strategies; and African elephant range States to provide information on progress made in the implementation of the African Elephant Action Plan. On the basis of the information specified above, the Secretariat is to recommend actions for consideration by the Conference of the Parties or the Standing Committee.

This is the fifth report prepared by the entities for the CITES Standing Committee, with previous reports having been provided for SC61 (Geneva, August 2011), SC62 (Geneva, July 2012), SC65 (Geneva, July 2014) and SC66 (Geneva, January 2016).

African elephants (*Loxodonta africana*): status, threats and conservation actions

This Section has been prepared by the IUCN/SSC African Elephant Specialist Group (AfESG).

The IUCN/SSC African Elephant Specialist Group (AfESG) provides technical expertise and advice to governments, NGOs, academic institutions and individuals in support of elephant conservation and management of the African elephant. As a critical component of this mandate, the AfESG maintains the African Elephant Database (AED), the formal repository for geo-spatial information on the numbers and distribution of the species. It also publishes the African Elephant Status Report (AESR). Full status reports were published in 1995, 1998, 2002, 2007, 2016 and provisional updates were released online for 2012 (in 2013) and 2013 (in 2015). The AESR 2016, which was released in September 2016, is the first full status report in almost a decade and, importantly, in a decade of major change for the species.

The African Elephant Status Report 2016

This report is largely based on the AESR 2016 (Thouless et al. 2016), which summarizes data contained within the AED up until the end of 2015. The AESR 2016 includes both an update of elephant numbers and range. The AESR 2016 presents more than 275 new or updated estimates for individual elephant populations across Africa, with over 180 of these arising from systematic surveys since the AESR 2007. New data came mainly from aerial surveys from the Great Elephant Census, other aerial surveys and from dung counts in Central Africa carried out primarily by the Wildlife Conservation Society (WCS) and the World Wide Fund for Nature (WWF).

From 1995 to 2016, elephant numbers in the AfESG's status reports and updates were aggregated into "Definite," "Probable," "Possible," and "Speculative" (DPPS) classes using a categorization system based on data reliability. This categorization system gave an indication of the level of certainty that could be placed on a given number, as determined by the method used to collect the data and how well it was carried out. The 2016 report, although using the same system for categorizing data reliability, presents elephant numbers as either "Estimates" (with a \pm 95% confidence limit) or "Guesses" (with a minimum to maximum range) instead of using the former DPPS system. "Estimates" are based on data from systematic surveys, including aerial, ground and dung counts and individual registration studies, whereas "Guesses" are based on data from areas not systematically surveyed and include some dung surveys, expert opinions, degraded data and modelled extrapolations.

The intent of the new system is to provide an easier and more intuitive means to tally total numbers of elephants to derive "Estimates" and "Guesses" at national, regional and continental levels. The number of elephant within each country sum to give national level totals; national level totals sum to give regional totals; and regional level totals sum to give the continental total. "Guesses", however, are not completely additive. For the AESR

2016, data from 2006 (AESR 2007; Blanc et al. 2007) were also aggregated under this new system, making it possible to make direct comparisons of changes in elephant numbers between 2006 and 2015.

Similar to previous status reports, elephant range is categorized as known, possible and doubtful (Figure 1). The area of known and possible range sums to give range at national, regional and continental levels, with the % of this area for which elephant estimates and guesses are available presented as assessed range, which together with the remaining unassessed range sums to 100%. The only countries where 100% of range has been assessed are Equatorial Guinea, Eritrea, Gabon, Guinea Bissau, Mali, Niger, Senegal and Swaziland. All these countries have very small populations with the exception of Gabon whose country total for 2015 is based on modeling for 100% of its range.

More detail on all information presented in this report can be found in the [AESR 2016](#).

Continental overview – status and threats

There are currently 37 African elephant range States with a known and possible elephant range of over 3.1 million km². All populations of African elephant have been listed on CITES Appendix I since 1989, except for four national populations that were transferred to Appendix II (Botswana, Namibia and Zimbabwe in 1997, and South Africa in 2000). The African elephant is listed as Vulnerable (A2a; Ver 3.1) in the IUCN Red List (Blanc, 2008). The AfESG has recently begun the process of updating the Red List assessment.

Guinea Bissau and Somalia are still classified as range States despite uncertainty regarding the current status of their populations. Eritrea has not been surveyed since 1997 but may have 120 elephants in an unprotected area in the south-west of the country on the border with Ethiopia. Other range States with very small populations (under 100) include Swaziland, Niger, Sierra Leone and Senegal.

The AESR 2016 revealed that Africa's elephant population has seen the worst declines in 25 years, mainly due to poaching over the past ten years. The continental total is now thought to be 415,428 (\pm 20,111) elephants, with an additional 117,127 to 135,384 elephants in areas not systematically surveyed. The estimates for 2015 are approximately 93,000 lower than in 2006, but this figure includes around 18,000 from previously uncounted populations, so the real decline from estimates is considered to be closer to 111,000 over ten years. The proportion of elephant range for which elephant estimates are available is 62%.

African elephants are not evenly distributed across their range and neither is their status or the threats facing them; populations in different regions and countries continue to face very different challenges. Southern, Eastern, Central and West Africa have 71%, 20%, 6% and 3% of the continental population respectively (Figure 2; Table 1). Poaching losses are still being reported across much of the continent and it is unknown whether the recent commitments to ban domestic ivory trade will result in a decline in ivory poaching. However, whilst much of the current conservation focus is on the threat of poaching, in the medium to long-term human expansion into elephant habitats, civil unrest and climate change are all likely to constitute the greatest threats to the survival of the species.

It is essential that landscape planning to support the coexistence of elephants and humans is carried out at all scales across the elephant range. Around 33 economic 'development corridors' have been planned, or are being implemented already, across Africa and if completed would total over 53,000 km in length (Laurance et al. 2015). These are therefore likely to significantly impact elephant populations across their range, although the proportion of critical elephant range that falls into these corridors is currently unknown and urgently needs to be assessed. Human-elephant conflict, already on the rise, is a symptom of this rapid land transformation and only likely to continue to increase. This is likely to result in increased damage to both people and elephants. Habitat loss and fragmentation will result in increasingly fragmented elephant populations, which are already at high risk of loss of viability. West Africa demonstrates well the end result of over a century of significant elephant population losses following unplanned development resulting in severe habitat degradation and growing resource scarcity. Elephant populations are small and fragmented, increasingly vulnerable to extinction. In the past ten years alone, 12 elephant populations have been reportedly lost across the region (in Côte d'Ivoire, Ghana, Guinea, Guinea Bissau, Nigeria, Sierra Leone and Togo).

Sub-regional summaries

Central Africa

The estimated number of elephants in Central Africa is 24,119 (\pm 2,865), with an additional 87,190 to 103,355 elephants in areas not systematically surveyed. These numbers apply to 70% (546,471 km²) of the estimated

known and possible elephant range in Central Africa. No estimates are available for the remaining 30% of range, which is still unassessed. Historically in Central Africa, elephants were distributed fairly evenly throughout the region's forests. However, political insecurity and lack of government control over remote areas has resulted in increased levels of poaching impacting both elephant numbers and distribution, with regional strongholds being those areas, which have experienced the least human impact.

Over the last ten years, dramatic losses of elephant populations in the region have been reported, including the loss of approximately 16,000 to 20,000 forest elephants (60 to 80% of the population) in Minkébé National Park in Gabon, the loss of approximately 3,000 elephants (50% of the population) in the Ndoki landscape in Republic of Congo (Congo) and the loss of several thousand elephants in the Cameroon section of the Tri-National Dja-Odzala-Minkébé (TRIDOM) forest. The Democratic Republic of the Congo's (DRC) elephant population, once one of Africa's most significant forest elephant populations, has declined by approximately 70% for estimates and 50% for guesses since 2006, with elephants now existing in tiny remnants across their vast former range. Garamba National Park, in the north-east of the country, has continued to see declines in elephant numbers in the last ten years as a result of intense and continuing poaching pressure.

Gabon and Congo now hold Africa's most important forest elephant populations but both have been affected by heavy poaching in recent years, as have the forest and savannah populations of Cameroon. Gabon, which contains 12% of the total African tropical moist forest area, now contains roughly half of Africa's forest elephants whilst DRC contains 60% of the region's forest and less than 10% of its forest elephants.

The savanna populations of Chad have taken heavy losses and those in the Central African Republic have almost completely disappeared. In the last ten years, both Chad and DRC have lost one population (Siniaka-Minia Faunal Reserve in Chad and Bushimaie Reserve and Hunting Area in DRC).

Largely as a consequence of new populations being surveyed, elephant estimates from systematic surveys have increased by about 9,000 since 2006. Substantial changes in range across Central Africa since 2006 are largely the result of improved information rather than real changes in range, except in the case of the Central African Republic, where almost all of the range in the north and east of the country has been lost.

Eastern Africa

The estimated number of elephants in Eastern Africa is 86,373 (\pm 10,549) with an additional 11,973 to 12,060 elephants in areas not systematically surveyed. These numbers apply to 62% (548,587 km²) of the estimated known and possible elephant range in Eastern Africa. No estimates are available for the remaining 38% of range, which is still unassessed. This region has been the most affected by poaching in the last ten years and has experienced an almost 50% elephant population reduction. Elephant numbers have declined by approximately 79,000 (taking into account new populations that have been surveyed since 2006) for sites with comparable survey techniques in 2006 and 2015. This has been largely attributed to an over 60% decline in Tanzania's elephant population. Despite this, Tanzania remains the region's stronghold, with an estimate of 50,433 (\pm 8,502) elephants in 2015.

Although some sites have recorded declines, elephant numbers have been stable or increasing since 2006 in Uganda, Kenya and Rwanda. Increases in elephant populations in Ethiopia and South Sudan are likely the result of improved information. There is very little recent information on elephant populations in Eritrea and Somalia, both of which reportedly have elephant populations confined to a single area. Range expansion has been observed in the Laikipia-Samburu and Magadi areas in Kenya: in the Laikipia-Samburu ecosystem, this has been linked to the development of community-based conservation and the recovery of elephants from heavy poaching in the 1970s to 1980s.

Southern Africa

The estimated number of elephants in Southern Africa is 293,447 (\pm 16,682) with an additional 15,157 to 16,672 elephants in areas not systematically surveyed. These numbers apply to 55% (734,824 km²), of the estimated known and possible elephant range in Southern Africa. No estimates are available for the remaining 45% of range, which is still unassessed. While poaching has not had the same impact in Southern Africa as in other areas, the region has recently faced a growing poaching threat. Elephant numbers in Southern Africa have declined by approximately 27,000 (taking into account new populations that have been surveyed since 2006) for sites with comparable survey techniques in 2006 and 2015. Although there have been population declines in Mozambique and Zimbabwe, the main contributor to this decline is Botswana (however, see comments below). Zambia's elephant population appears to be relatively stable. Zimbabwe's elephant population declined due to reductions in the Sebungwe and Lower Zambezi populations as a result of

poaching, partially compensated by increases in populations in the south-east of the country. South-east Angola has experienced heavy losses due to poaching. Mozambique's elephant population has been reduced by an estimated 25%, mostly in the north due to severe and on-going poaching. Malawi has small, fragmented elephant populations, some of which have declined since 2006 because of poaching. Swaziland's elephant populations are well known, being mainly restricted to fenced enclosures. Elephant populations in Namibia and South Africa have increased.

Botswana has by far the largest elephant population of any country in Africa, with over 99% of these in the northern part of the country. The reported decline between 2006 and 2015 is ambiguous and may be the result of uncounted elephants, range expansion, seasonal movements into and out of the surveyed area, increased poaching or methodological differences between surveys. Range expansion has been observed into the west towards Namibia and into central Botswana, with notable numbers of elephants observed for the first time in a survey in 2015 in the Central Kalahari Game Reserve.

West Africa

The estimated number of elephants in West Africa is 11,489 (\pm 2,583) with an additional 2,886 to 3,376 elephants in areas not systematically surveyed. These numbers apply to 72% (102,850 km²), of the estimated known and possible elephant range in West Africa. No estimates are available for the remaining 28% of range, which is still unassessed. With growing human populations and increasing infrastructure development, many countries in West Africa are experiencing increased pressure on natural areas from mining, logging and rapid transformation of land to agriculture. West Africa's elephant populations are mostly small, fragmented and isolated, but the overall number of elephants in West Africa appears to have increased since 2006. This is attributed to population increases in the trans-frontier "WAP" complex that straddles the border between Benin, Burkina Faso and Niger and remains the stronghold of West Africa's remaining elephants.

Estimates for Côte d'Ivoire, Ghana, Guinea Bissau, Senegal, Sierra Leone and Togo have stayed more or less constant with some higher and lower guesses, while estimates for Guinea, Mali and Nigeria have declined since 2006. Guinea is now reduced to a single small population. In Mali, elephants are restricted to one area where they have huge ranges making them difficult to survey. Niger's few remaining elephants are thought to still move in and out of the country as part of the "WAP" complex. Estimates for Liberia, where elephants are restricted to two forested blocks, have increased slightly. Although 12 populations have been reported as lost in West Africa, a number of small populations have continued to persist.

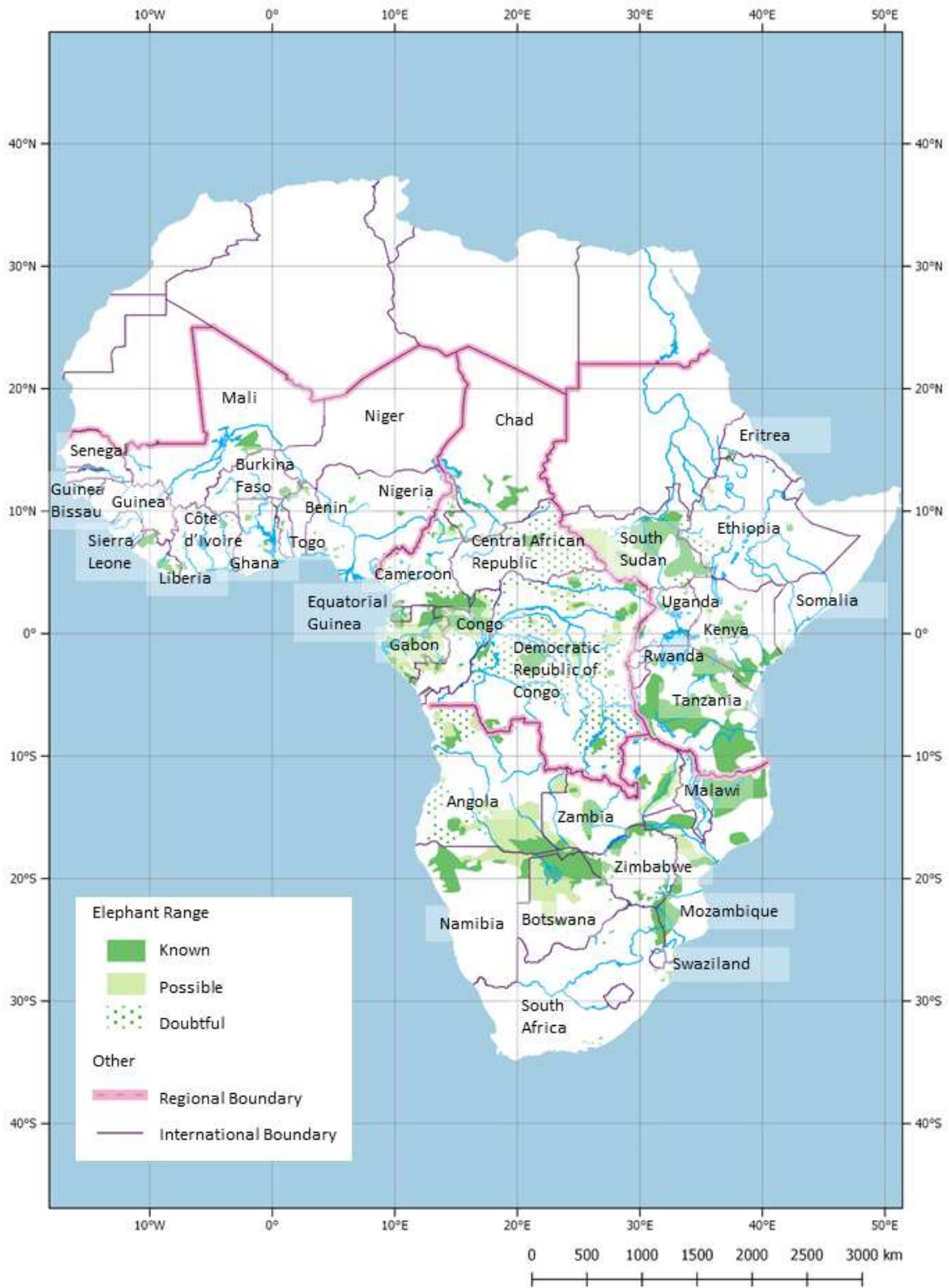


Figure 1. African elephant range in 2015 – only range States are labelled (African Elephant Status Report 2016).

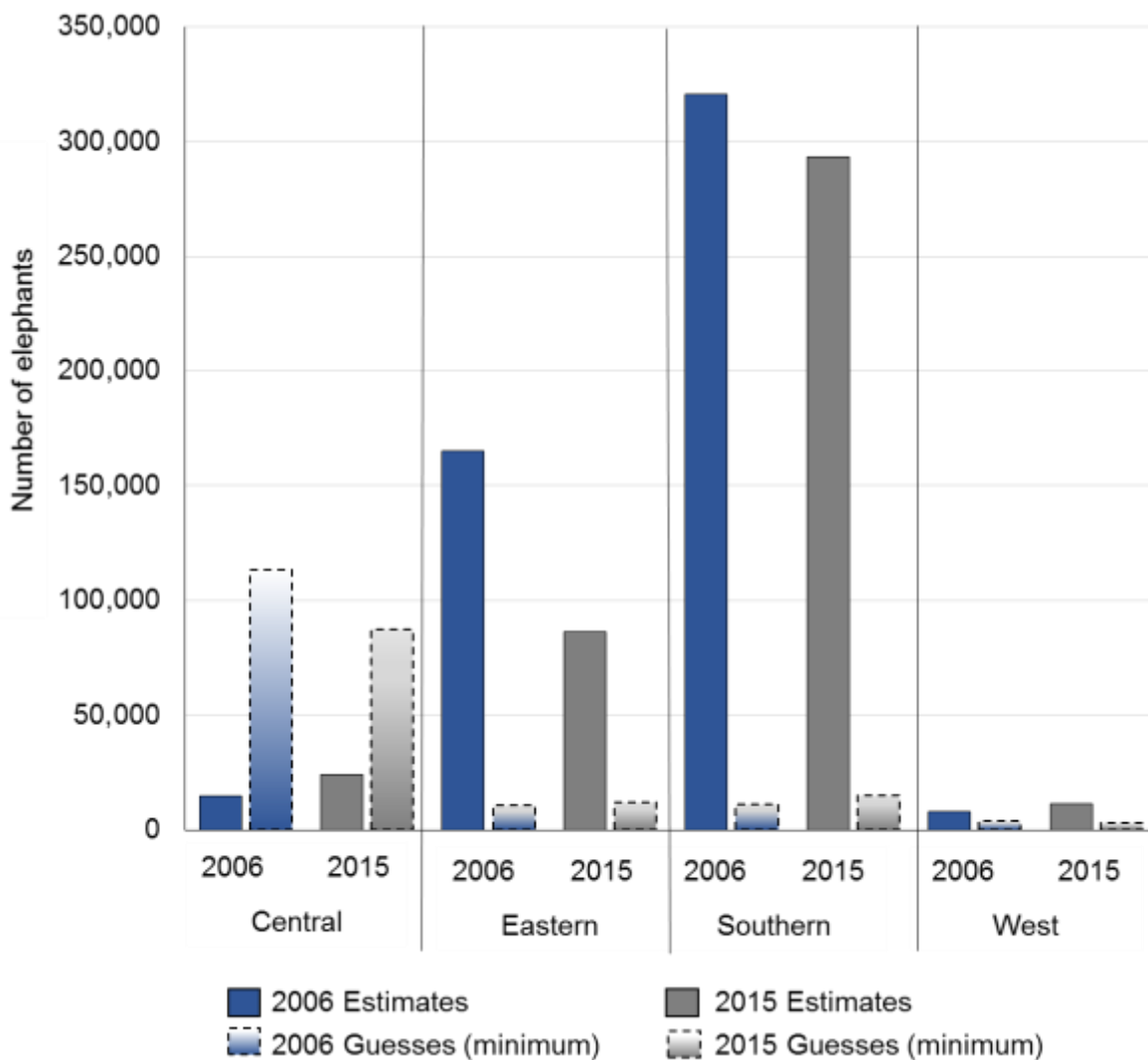


Figure 2. Total numbers of elephants in 2006 and 2015 in each region of Africa. “Estimates” presents the total number of elephants estimated from systematic surveys for 2006 (blue) and 2015 (grey). Confidence intervals are not shown. “Guesses” are the numbers of elephants from all other sources of data for 2006 (blue with dotted outline) and 2015 (grey with dotted line). “Guesses” are normally presented as a range – in this graph the number of elephants shown under “Guesses” is the minimum value of the range. As numbers from “Estimates” and numbers from “Guesses” are not additive, they are shown side by side for each year. All data is from the African Elephant Status Report (AESR) 2007 and the AESR 2016. All data in the AESR 2007 were collected prior to 31 December 2006 and all data in the AESR 2016 were collected prior to 31 December 2015.

Table 1. Total numbers of elephants in 2006 and 2015 in each region of Africa. “Estimates” presents the total number of elephants (with a $\pm 95\%$ confidence limit) estimated from systematic surveys and “Guesses” are the numbers of elephants from all other sources of data (presented as a range from-to)

Region	2006				2015			
	Estimates		Guesses		Estimates		Guesses	
	Estimate	$\pm 95\%$ CL	From	To	Estimate	$\pm 95\%$ CL	From	To
Central Africa	14,622	4,259	113,540	117,881	24,119	2,865	87,190	103,355
Eastern Africa	165,151	27,990	10,722	12,066	86,373	10,549	11,973	12,060
Southern Africa	320,690	23,132	11,197	13,253	293,447	16,682	15,157	16,672
West Africa	7,862	375	3,745	4,053	11,489	2,583	2,886	3,376

Priority for future surveys

The AESR 2016 uses the 'Priority for Future Surveys' index which is an unbiased system for setting priorities for future surveys which includes every site. However it is worth noting two regions that are critical priorities for future surveys. Gabon is a priority for future surveys as it is believed to be home to the majority of Africa's forest elephants and 80% of its elephant range has not been surveyed in the past five years, and some of it has never been surveyed. There is still major uncertainty about the size of the Kavango-Zambezi Transfrontier Conservation Area (KAZA TFCA) savanna elephant population of Angola, Botswana, Namibia, Zambia and Zimbabwe – the single largest on the continent – and it remains critical to undertake a coordinated survey of this population across the whole of its range.

New and expected survey results for 2017 and 2018

In Central Africa, forest elephant surveys are planned for some areas thought to be heavily impacted by poaching, including in Gabon. WWF and WCS have completed some surveys, and are planning others, in the Central African Republic, central and northern Congo, Gabon, Cameroon and DRC. Once reviewed and incorporated into the AED, some of these surveys will help to shift many of the populations classified as guesses into estimates. In Eastern Africa, Kenya's forest-dwelling populations have not been surveyed since before 2006. Dung surveys across the countries forests have recently been completed, sponsored primarily by WCS and WWF. Surveys were also conducted in South Sudan at the end of 2016, which will improve previous estimates. In Southern Africa, a national elephant survey in Angola is still in the process of being planned. Efforts to coordinate and conduct a survey for the KAZA TCFA region are still underway. Mozambique is planning a national elephant census in 2018, the results of which are expected in early 2019.

Elephant conservation action plans and strategies

At the continental level, the African Elephant Action Plan (AEAP) was adopted by a consensus of all the African elephant range States in 2010. The AfESG supported the technical preparation of this first continent-wide AEAP, a framework to guide action and financing, which is now in the final third of its life span. Given the time required to prepare the technical background needed to revise such plans, the AfESG is looking for funding to embark on a series of new analyses to support the revision and is hoping to partner with UNEP in facilitating the process to initiate a renewed and fully collaborative process to develop a post-2020 AEAP.

As reported in SC66 Doc. 47.1 while regional action plans have been developed for Central, Southern and West Africa, they are outdated and no longer considered reliable in guiding conservation and management action.

There is a growing number of range States that are drafting or updating their national action plans (Tables 2 and 3). In 2016 (SC66 Doc. 47.1) Cameroon, Chad, Ethiopia, Gabon, Kenya, Niger, Mozambique, Malawi and Tanzania were all reported as having updated, or to be in the process of updating, their action plans since 2010. Since then, Angola, Congo, Liberia, Namibia, Uganda and Zimbabwe have also either updated, or are in the process of updating, their action plans.

Table 2. Elephant strategies, management plans and action plans (as per information available to AfESG, 31 July 2017). Publication dates are shown in brackets.

African elephant strategies, management plans and action plans			
Central Africa	Eastern Africa	Southern Africa	West Africa
African Elephant Action Plan (2010)			
Strategy for the conservation of elephants in Central Africa (2005)		Southern Africa Regional Elephant Conservation and Management strategy (2005)	Strategy for the Conservation of West African Elephants (2005) Convention on Migratory Species West African Elephant Memorandum of Understanding (2005)

African elephant strategies, management plans and action plans			
Central Africa	Eastern Africa	Southern Africa	West Africa
Strategy and Management Plan for Elephants in Cameroon, 2011 - 2020 (2010) Elephant conservation action plan, Central African Republic (1992) National elephant action plan, Chad, 2016-2025 (2015) National elephant action plan, Republic of the Congo (2017)* Elephant conservation plan, Democratic Republic of Congo (1991) Elephant conservation plan, Equatorial Guinea (1991) Gabon national elephant conservation strategy (2015)*	Ethiopian elephant action plan, (2015)* Conservation and management strategy for the elephant in Kenya, 2012 – 2021 (2012)** Elephant conservation plan, Rwanda (1991) Elephant conservation plan, Somalia (1991) Elephant conservation plan, Sudan (1991) Tanzania elephant management plan, 2010 – 2015 (2010) Elephant conservation action plan for Uganda 2016 – 2026 (2016)	National Action Plan for the elephant in Angola (2016)* National policy and strategy for the conservation and management of the African elephant, Botswana (2003) National elephant action plan, Malawi (2015)* Strategy and action plan for the conservation and management of elephants in Mozambique 2010-2015 (2010) Elephant management plan, Namibia (2007)** Norms and Standards for managing African elephants, South Africa (2008)*** National policy and action plan for elephant management, Zambia (2003) Zimbabwe national elephant management plan, 2015 - 2020 (2015)	National strategy for elephant conservation, Benin (2005) Elephant management strategy, Burkina Faso (2003) Côte d'Ivoire national strategy for elephant management, 2005 - 2014 (2004) National elephant conservation strategy, Ghana (2000) National elephant management strategy, Guinea (2007) National elephant action plan, Guinea-Bissau (2000) National elephant action plan, Liberia (2016)* Elephant conservation plan, Mali (1991) Strategy and action plan for sustainable management of elephants, Niger (2010) Elephant conservation plan, Nigeria (1991) Elephant conservation plan, Senegal (1991) Elephant conservation plan, Sierra Leone (1991) National strategy for elephant management, Togo (2003)

* in draft form or in progress; ** review undertaken; *** revision underway

Table 3. Anti-poaching and law enforcement strategies, management plans and action plans (as per information available to AfESG, 31 July 2017). Publication dates are shown in brackets.

Anti-poaching and law enforcement strategies, management plans and action plans			
Central Africa	Eastern Africa	Southern Africa	West Africa
The Central African Forests Commission (COMIFAC) Extreme Urgency Anti-Poaching Action Plan (PEXULAB)	National strategy to combat poaching and illegal wildlife trade, Tanzania (2014)	SADC Law enforcement and anti-poaching action strategy, 2016 - 2021 (2015)	

References

Blanc, J.J., Barnes, R.F.W., Craig, G.C, Dublin, H.T., Thouless, C.R., Douglas-Hamilton, I. and Hart, J.A. (2007). African Elephant Status Report 2007: An update from the African Elephant Database. IUCN, Gland, Switzerland.

Blanc, J. (2008). *Loxodonta africana*. The IUCN Red List of Threatened Species 2008: e.T12392A3339343. <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T12392A3339343.en>. Downloaded on 31 July 2017.

Laurance, W. F., Sloan, S., Weng, L., and Sayer, J. A. (2015). Estimating the environmental costs of Africa's massive "development corridors". *Current Biology*, 25, 3202-3208.

Thouless, C.R., Dublin, H.T., Blanc, J.J., Skinner, D.P., Daniel, T.E., Taylor, R.D., Maisels, F., Frederick H. L. and Bouché, P. (2016). African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC Africa Elephant Specialist Group. IUCN, Gland, Switzerland.

Asian elephants (*Elephas maximus*): Status, threat and conservation actions

This Section has been prepared by the IUCN/SSC Asian Elephant Specialist Group (AsESG).

The Asian Elephant Specialist Group (AsESG) is a global network of specialists on Asian Elephants (*Elephas maximus*) and provides technical support to governments and others on long-term conservation of Asian Elephants. The overall aim of the AsESG is to promote the long-term conservation of Asia's elephants and, where possible, the recovery of their populations to viable levels. The AsESG acts as the Red List Authority for the Asian Elephant, carrying out Red List assessments for inclusion in the IUCN Red List. Group members have also helped in the development of the Convention on International Trade in Endangered Species (CITES)

system for Monitoring the Illegal Killing of Elephants (MIKE) and The Elephant Trade Information System (ETIS).

The mandate of the AsESG includes assessing and monitoring the status of wild and captive populations, analyzing the threats to wild populations and the interrelationship with captive populations, providing conservation recommendations and initiate conservation actions involving relevant stakeholders and convening expertise needed for conserving Asian elephants

The current wild distribution of Asian Elephants is in 13 countries across South and Southeast Asia. It occurs in Bangladesh, Bhutan, India, Nepal, and Sri Lanka in South Asia and Cambodia, China, Indonesia (Kalimantan and Sumatra) Lao PDR, Malaysia (Peninsular Malaysia and Sabah), Myanmar, Thailand, and Vietnam in South-east Asia. Feral populations occur on some of the Andaman Islands (India). All populations of Asian elephants are included in CITES Appendix I, and the global status of the species in the IUCN Red List remains as Endangered (A2c; ver 3.1; Choudhury et al., 2008). The Sumatran Elephants (*E. m. sumatranus*) are listed as Critically Endangered (A2c; ver 3.1; Gopala et al., 2011).

The major threats to Asian elephant continues to be habitat loss, degradation and fragmentation to cater to the need of growing economy and increasing human population. The spread of human settlements, plantations, industry, farming, mining and linear infrastructures are squeezing elephant populations into ever-decreasing pockets of forests surrounded by humans. This has increased the human-elephant conflict in most range states. Hundreds of people and elephants are killed annually because of such conflicts. Human elephant conflict (32%), habitat loss and fragmentation (25%), trans-boundary issues (17%), and protection and illegal trade in elephant products (13%) were identified as main threat to elephant conservation by range States during the 2nd Asian elephant Range States Meeting in Jakarta, Indonesia 2017. The corridors connecting the fragmented habitat, many of them passing through private forests, plantations and agricultural land are also threatened and members felt the urgent need to safeguard and secure these corridors to minimize human-elephant conflict.

Cases of poaching and illegal capture of elephants have also increased over the years in few countries. Apart from these, larger number of captive elephants exists in range countries and lack of standardized elephant registration system has further provided cover for illicit trade in elephants and their body parts, including ivory and this needs to be addressed through appropriate registration systems and monitoring protocols for these captive populations. Additionally, trans-boundary cooperation in preventing trade of the species also came up strongly during the second Asian Range States meeting in Jakarta in 2017.

Update on Asian elephant population estimates

Lack of reliable methods for population estimation and distribution are often challenges while designing long-term conservation strategies for elephants in Asia. The current estimate of about 44,281 – 49,731 (Table 1) based on the group exercise with range country officials and AsESG members during IUCN AsESG members meeting held in India in November 2016 (IUCN AsESG 2016, un-published) indicates that 6% of these numbers have been estimated with a method that stands up to scientific scrutiny and can be termed as reliable estimates. Over 80% of the reported numbers are possible elephant estimates (categorized as not precise estimates). Between 10–13% of the reported numbers seem to be doubtful given that no actual field surveys have taken place and are based solely on informed guesses made based on a few signs encountered, or guess estimates based on interviews/conversation with local communities.

Table 1: Estimates of Asian elephants across the range (IUCN AsESG 2016, un-published)

Country	Reported Population Size
India	27,312* (elephant population density estimated using sample block counts for the larger populations, and total count for small scattered elephant groups and solitary individuals)
China	219–242 (Zhang <i>et al</i> 2015)
Malaysia (Peninsular)	1,223 – 1,463 (1,564 – 1,677) (Salman <i>et al</i> 2011) Taman Negara (436-915) & Endau Rompin (113) based on Dung Density methods.
Malaysia (Sabah)	2,040 (1,184 – 3,652)

	(Alfred <i>et al</i> (2010) –Dung count)
Thailand	Minimum of 3124 ** Based on DNA survey, camera trap and direct counts.
Cambodia	249-362 DNA estimation, Camera trap
Myanmar	2,000–4,000
Vietnam	84-105 Actual sighting of groups, based on foot prints
Bangladesh	270–327 (Resident: 197–227, Migrant 83–100) Line transect and dung decay estimation
Nepal	107–145 Bardiya – 80 (DNA estimation)
Laos	No data (ca. 600 – 800 (Khamkhoun <i>et. al.</i> 2011)
Indonesia	1,720 Dung Density and DNA from Dung for Lampung and Tesso Nil, Riau populations. Aceh – 500 (actual & block) Bengkulu – 50 (actual count) Jambi – 159 (FZS) Rian – 159 (FKGi)
Indonesia (Borneo)	60–100
Sri Lanka	5,879 Water hole count, Total count
Bhutan	250–500 513 (2010 estimation; looking at the habitat/ forest cover) Current estimation is more than 500
Total (Min–Max)	Ca. 44,281- 49,731

* updated based on MoEF&CC, Government of India elephant estimation report 2017

** Group exercise by IUCN AsESG members from Thailand and others working on elephants, 2017

Of some concern are the wild elephant populations in Vietnam, facing a very real threat of extinction as their numbers have declined to 100+ from an estimated 1,500 – 2,000 in the 1980s.

Acknowledging that elephants are long ranging and distributed across landscapes often covering multiple states in India, the need for a single synchronized elephant population estimation within each of the four geographical regions was recognized. Project Elephant, Ministry of Environment, Forest and Climate Change along with ANCF undertook the Synchronized Elephant Population Estimation India in 2017 (March – May 2017) that has provided the country an estimate that minimizes the bias in population estimation of the past. This national exercise estimated elephant population density using sample block counts for the larger populations, and total count for small scattered elephant groups and solitary individuals. This exercise also included estimating the elephant population density using the indirect dung count method as prescribed in Hedges & Lawson (2006) by the CITES Secretariat under the MIKE (Monitoring the Illegal Killing of Elephants) Programme. It requires, in addition to estimates of dung density through line transects, an estimate of dung decay rate specific to a given area or region as well as the defecation rate of elephants. While detailed analysis is yet to be completed, preliminary analysis of direct count method using random block sampling has shown that the Asian elephant population in India to be around 27,312 elephants from 23 states in India.

The IUCN SSC Asian Elephant Specialist Group meeting in 2016 in India also looked at the various statistically robust methods for population estimation and the expertise available in various regions. It also emphasized on the need to undertake mapping of the distribution of elephants in Asia.

Threats, Conservation Strategies and Action Plan

In addition to the threats discussed above, the lack of specific elephant conservation/ management policies in most range States, the lack of viable and well tested solution specifically on mitigating human-elephant conflict, lack of trans-boundary cooperation among range countries, limited monitoring mechanism to assess effectiveness of conservation initiatives and techniques and limited resources to undertake conservation actions are other threats that have been identified.

The second Asian elephant range States Meeting in Jakarta, Indonesia in April 2017 was jointly organized by the Ministry of Environment and Forestry, Republic of Indonesia, Regain Foundation and AsESG. It discussed the current challenges confronting elephant conservation in Asia, identified possible solutions and agreed to enhance the cooperation among Asian countries to conserve elephants in the region. Each range State presented on the conservation status of elephants in their country and the session was facilitated by the Chair

of the AsESG. With participation of 12 range States (Nepal could not participate due to a scheduled national election), the meeting led to the adoption of the Jakarta Declaration for Asian Elephant Conservation agreed by all Range countries. The salient points of the Declaration are as follows

“We declare

- We have a common vision to promote Asian Elephant conservation;
- Affirm our intention to cooperate based on the principles of sustainable development and through research and development, education and training, fund-raising, as well as other activities that are relevant to Asian Elephant conservation and development within the Range States;
- Commit to develop where necessary, and implement our National Asian Elephant Action Plans that include, but are not limited to, the priorities listed in the annex to this Declaration.

And call upon the international community to join us in reversing the decline in Asian Elephant numbers and positioning the Asian Elephant securely on the road to recovery.

Annex: priorities

- Maintain large Asian Elephant conservation landscapes where no unregulated, economic or commercial infrastructure development or other adverse activities are permitted, and create connectivity between such landscapes where all permitted developmental activities are elephant- and biodiversity-appropriate;
- Work collaboratively on trans-boundary issues to allow uninhibited movement of wild Asian Elephants in and between Range States through appropriate corridors and trans-boundary protected areas;
- Minimize the negative impacts of humans on Asian Elephants and their habitats, address the root causes of human-elephant conflict and develop long term solutions to minimize such conflict; engage with local communities to gain their participation in biodiversity conservation and land-use planning; and provide sustainable and alternative livelihoods through financial support, technical guidance, and other measures;
- Ensure effective enforcement of existing national laws and regulations across the species' range to prevent illegal killing of Asian Elephants and the illegal trade in live Asian Elephants, ivory, and other elephant body parts.
- Strengthen international collaboration, coordination, and communication where relevant, involving specialized expertise from international organizations, including but not limited to, CITES, INTERPOL, and UNODC;
- Cooperatively develop captive Asian Elephant registration programs, including where appropriate micro-chipping and/or DNA-based systems, and ensure cross-border movements of captive Asian Elephants are in compliance with all national and international laws and regulations;
- Ensure the welfare of captive elephants is maintained at all times;
- Develop where necessary National Asian Elephant Action Plans and a Range-wide Asian Elephant Conservation Plan and ensure their timely implementation.”

The meeting emphasized the need to have a National elephant conservation Action plan for each country followed by a range-wise plan that will largely be a vision, strategy and policy document.

Currently Malaysia (Peninsular), Indonesia (until October 2017), Sri Lanka, Nepal, Vietnam and Thailand have National Elephant Conservation Plan, while that of Malaysia (Sabah) has lapsed. Countries with draft action plans include China, Cambodia, Bangladesh, Myanmar, Malaysia (Sabah) and these needs to be finalized for which IUCN AsESG has offered its technical assistance to the range States to prepare their National Action plans. Lao PDR, Bhutan and India do not have National Elephant Action Plans. However, India has Management Plans for all their existing 29 Elephant Reserves, and have the Elephant Task Force (in 2010) that provides with concrete recommendations/plans for the long-term conservation of the species in its report Gajah. Bangladesh has recently developed a report on the status of their elephants in 2016.

The Range country meeting also discussed on the challenges in managing the captive elephant population (population: approx. 15,000 elephants) and the need to have a standardized elephant registration process (which is currently lacking) including DNA registration, guidelines for the management and welfare of captive elephants, disease management (including zoonotic diseases), training and capacity building of staff and

mahouts and specific national policy to manage captive elephant population. It also suggested including the captive elephant management in the National elephant conservation Action plan being developed by Range countries.

The general office of the State Council of China, has issued a notification on “Stopping Activities of Commercial Processing and Sales of Ivory and Related Products” at the end of 2016. According to the notice, a group of designated ivory processing units will be closed, while a range of specific ivory processing and sales activities in designated trading locations will be banned before 31st March 2017. A comprehensive ban will be in practice from 31st December 2017 and this may contribute to a decline the ivory demand and the trade.

References

Choudhury, A., Lahiri Choudhury, D.K., Desai, A., Duckworth, J.W., Easa, P.S., Johnsingh, A.J.T., Fernando, P., Hedges, S., Gunawardena, M., Kurt, F., Karanth, U., Lister, A., Menon, V., Riddle, H., Rübel, A. & Wikramanayake, E. (IUCN SSC Asian Elephant Specialist Group). 2008. *Elephas maximus*. [The IUCN Red List of Threatened Species 2008](#).

CITES 2016. Monitoring the Illegal Killing of Elephants: A Report to the Standing Committee of CITES (17th Meeting of the Conference of the Parties Johannesburg, South Africa, CoP Doc 57.5, 2016); https://cites.org/eng/prog/mike/data_and_reports.

Gopala A, Hadian O, Sunarto, Sitompul A, Williams A, Leimgruber P, Chambliss SE & Gunaryadi D (2011) *Elephas maximus* ssp. *sumatranus*. In: The IUCN Red List of Threatened Species. Version 2011.2. IUCN 2011. accessed Dec. 2011.

Hedges & Lawson (2006): Monitoring the illegal killing of elephants: dung survey standards for the mike programme.

MoEF&CC (2017). Synchronized elephant population estimation: India 2017. Project Elephant Division, Ministry of Environment, Forest and Climate Change, Government of India

Sukumar, R (2011). The story of Asia's elephants. pp. 339

Monitoring the Illegal Killing of Elephants

This section has been prepared by the CITES Secretariat.

Levels of and trends in illegal killing of elephants in Africa

This section has been updated based on poaching trends in Africa released on 3 March 2017¹. It updates the trend analysis to include the latest data received, as of 1 August 2017. Because of late submissions of elephant carcass records from several MIKE sites, some statistics and observations differ from those reported on 3 March 2017. Specifically, this report updates the March 2017 analysis to include additional carcass records from 2015 in Gourma (Mali), Minkèbè National Park (Gabon), and Lopé National Park (Gabon); as well as additional carcass records from 2016 in Minkèbè National Park (Gabon) and Cabora Bassa (Mozambique).

The CITES programme for Monitoring the Illegal Killing of Elephants, commonly known as MIKE, was established by the Conference of the Parties (CoP) to CITES at its 10th Meeting (Harare, 1997) in accordance with the provisions in Resolution Conf. 10.10 (Rev. CoP17) on Trade in elephant specimens. The MIKE Programme is managed by the CITES Secretariat under the supervision of the CITES Standing Committee. Since implementation began in 2001, the operation of the MIKE Programme in Africa has been possible thanks to 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 building capacity for elephant management in range States. 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 together hold an estimated 30 to 40% of the African elephant population, and 27 sites in Asia.

MIKE data is collected by ranger patrols in the field 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, such as sex and age of the animal, status of ivory and stage of decomposition of the carcass. This information is recorded in

¹ https://cites.org/sites/default/files/eng/prog/MIKE/MIKE_report_released_WWD_3Mar2017.pdf

standardized carcass forms, details of which are then submitted to the MIKE Programme. A database of more than 16,170 carcass records has been assembled to date, providing the most substantial information base available for making a statistical analysis of the levels of illegal killing of elephants.

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.

While PIKE provides a sensitive measure of poaching trends, it may be affected by several potential biases related to data quality, reporting rate, carcass detection probabilities, variation in natural mortality rates and other factors, and hence results need to be interpreted with caution. However, the fact that the quantitative results presented below are in good agreement with quantitative information available from other sources, such as the Elephant Trade Information System (ETIS) and the African Elephant Database of the IUCN/SSC African Elephant Specialist Group, gives confidence as to the robustness of the results.

Trend analysis

Trend analyses of MIKE data using standardized methodology have been presented to the 15th, 16th and 17th meetings of the Conference of the Parties to CITES, in 2010, 2013 and 2016 respectively; to the 61st, 62nd, 65th and 66th meetings of the CITES Standing Committee, as well as to other meetings such as the African Elephant Summit (Gaborone, December 2013) and its follow-up meeting (Kasane, March 2015). In addition, analyses of MIKE data have been published in the peer-reviewed scientific literature (Burn et al. 2011; Wittemyer et al. 2014).

Since the report submitted to the 17th meeting of the Conference of the Parties to CITES, held in South Africa in September - October 2016, which included elephant carcass records received up to the end of 2015, additional records for 1,394 elephant carcasses encountered during 2016 have been received from 35 sites in Africa. While the number of reporting sites slightly declined compared to 2015, when 38 sites reported, the total number of carcass records received is comparable (see Fig 1, lower chart).

The data set used for analysis now consists of 16,170 records of elephant carcasses found between 2003 and the end of 2016 at 51 MIKE sites in 27 range States in Africa, representing a total of 544 site-years. These data can be accessed through https://cites.org/eng/prog/mike/data_and_reports.

Figure 1 shows empirically-derived time trends in PIKE at the continental level for reporting African MIKE sites, with 90% confidence intervals. The chart shows a steady increase in levels of illegal killing of elephants starting in 2006, peaking in 2011, and leveling off and slightly declining thereafter. As in 2015, the PIKE level shows a slight decline but the estimated poaching rate in 2016 remains high – that is, above a PIKE value of 0.5 (i.e. more elephants die from poaching than die from natural causes). This may imply that elephant populations at MIKE sites overall are likely to have continued to decline in 2016.

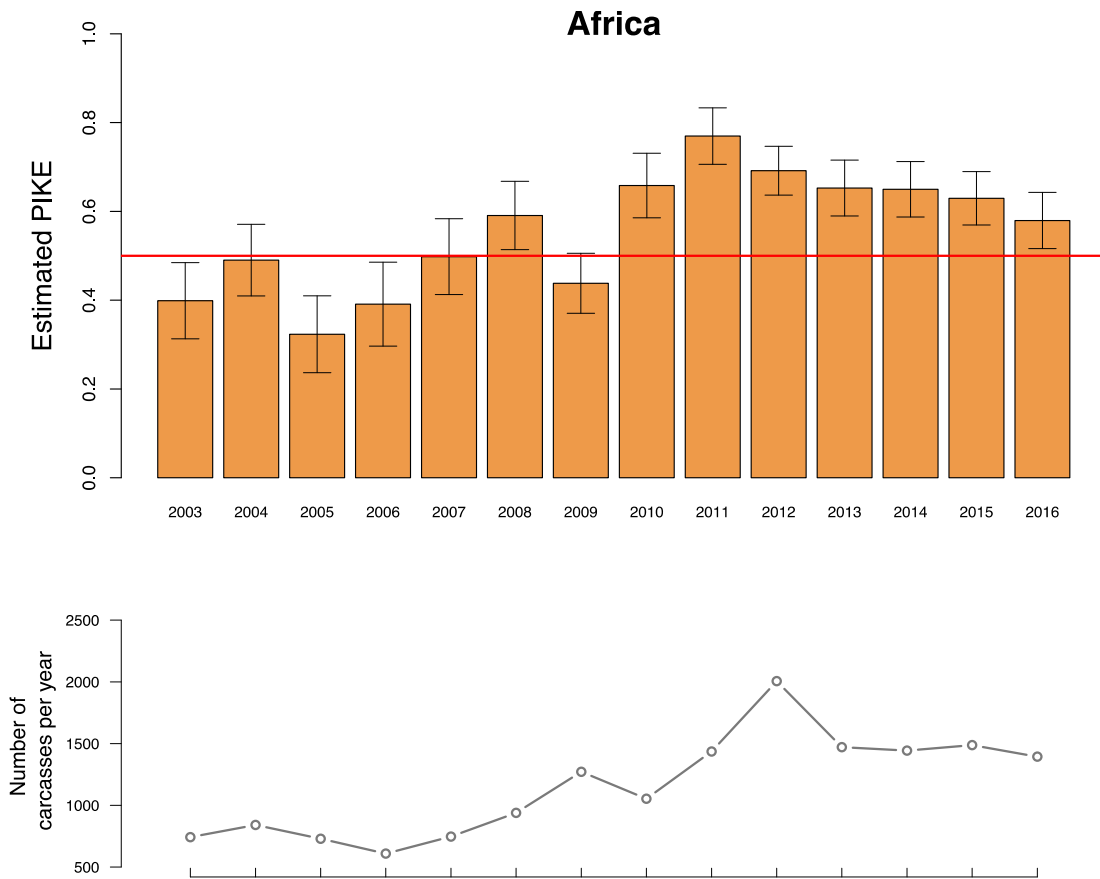


Figure 1. The upper chart shows the PIKE trend in Africa with 90% confidence intervals, based on 16,170 elephant carcasses (illegally killed or otherwise) reported to MIKE for the period 2003-2016. PIKE levels above the horizontal line at 0.5 (i.e. where half of dead elephants found are deemed to have been illegally killed) are considered cause for concern. The lower graph shows the total number of carcasses reported by year, irrespective of cause of death. The total number of carcasses reported per year has remained relatively unchanged since 2013.

It is difficult to estimate poaching impact at the site level, especially in sites that do not have sufficiently large carcass sample sizes, or where there may be indications of bias in reported PIKE levels or where climatic conditions have dramatically varied, such as drought. However, among sites that have reported 20 or more carcasses in 2016, where the site-level PIKE can be taken to be relatively reliable, those of concern (taken as those with a PIKE of 0.7 or higher) include: Odzala-Koukoua National Park (Republic of the Congo), Minkébé (Gabon), Niassa National Reserve (Mozambique), Garamba National Park (Democratic Republic of the Congo) and Gourma (Mali). In this group of MIKE sites, PIKE value ranged from 73% (in Odzala-Koukoua National Park) to 100% in Gourma.

However, PIKE value decreased from 2015 to 2016 by more than 10% in several sites. This includes two MIKE sites in the United Republic of Tanzania (Ruaha Rungwa where PIKE dropped by 37%; and Selous-Mikumi, where it dropped by 35%); and one site in South Africa (Kruger, which showed a decline of 20%). The following paragraphs discuss potential reasons for these substantial declines. Other sites that recorded declines of more than 10% include Dzanga-Sangha in the Central African Republic, which showed 20% decline, and in Tsavo Conservation Area in Kenya, where PIKE reduced by 11%.

Of relevance to these results is the fact that the number of elephant carcass records from three MIKE sites in the United Republic of Tanzania dropped by 55% in 2016 relative to 2015 (Katavi Rukwa, National Park and Game Reserve, Ruaha Rungwa, National Park and Game Reserve and Selous-Mikumi, Game Reserve and National Park). Tanzania’s MIKE National Coordinator communicated that this decline in number of carcass records may be due to several actions taken by the government, including the launch of a National Anti-Poaching Strategy in October 2014, and the arrest of several high-profile poachers and traffickers, as reported in the national and international media.

In addition, the total number of carcass records from Kruger (South Africa) increased from 74 records in 2015 to 165 in 2016. However, while the actual number of illegally killed elephants reported increased by 53% (i.e. 30 in 2015 compared to 46 in 2016), the resulting PIKE value for Kruger declined from 0.41 to 0.20. This drop in PIKE is due to higher natural elephant mortality during the same period, which therefore reduces the overall proportion of illegally killed elephants. This higher natural mortality may be explained by two consecutive years of below average rainfall in the area.

PIKE levels at the sub-regional level are shown in Figure 2. The PIKE values in the African sub-regions in 2016 are statistically indistinguishable from those reported in 2015, except for Eastern Africa. In Eastern Africa, PIKE levels declined from 0.42 in 2015 to 0.30 in 2016. This decline could be attributed to the decline of PIKE in 2016 at the site level in Ruaha Rungwa (Tanzania), Selous-Mikumi (Tanzania) and Tsavo Conservation Area (Kenya) – as discussed above.

With only seven sites reporting data for 2016, West Africa continues to be a cause for concern in terms of data quantity and quality, making reliable inference on trends impossible for the sub-region. Due to low reporting rates, it is hard to make reliable inferences about the year-on-year trend in West Africa (Figure 2, bottom-left).

Overall, reported poaching levels continue to pose a risk to the survival of African elephants, with the overall poaching trends in 2016 suggesting more elephants die from poaching that die from natural causes. At the sub-regional level, PIKE levels in Eastern Africa in 2016 is now likely to be below the levels recorded in that sub-region in 2008, principally due to lower levels of poaching recorded at selected MIKE sites in Kenya and the United Republic of Tanzania.

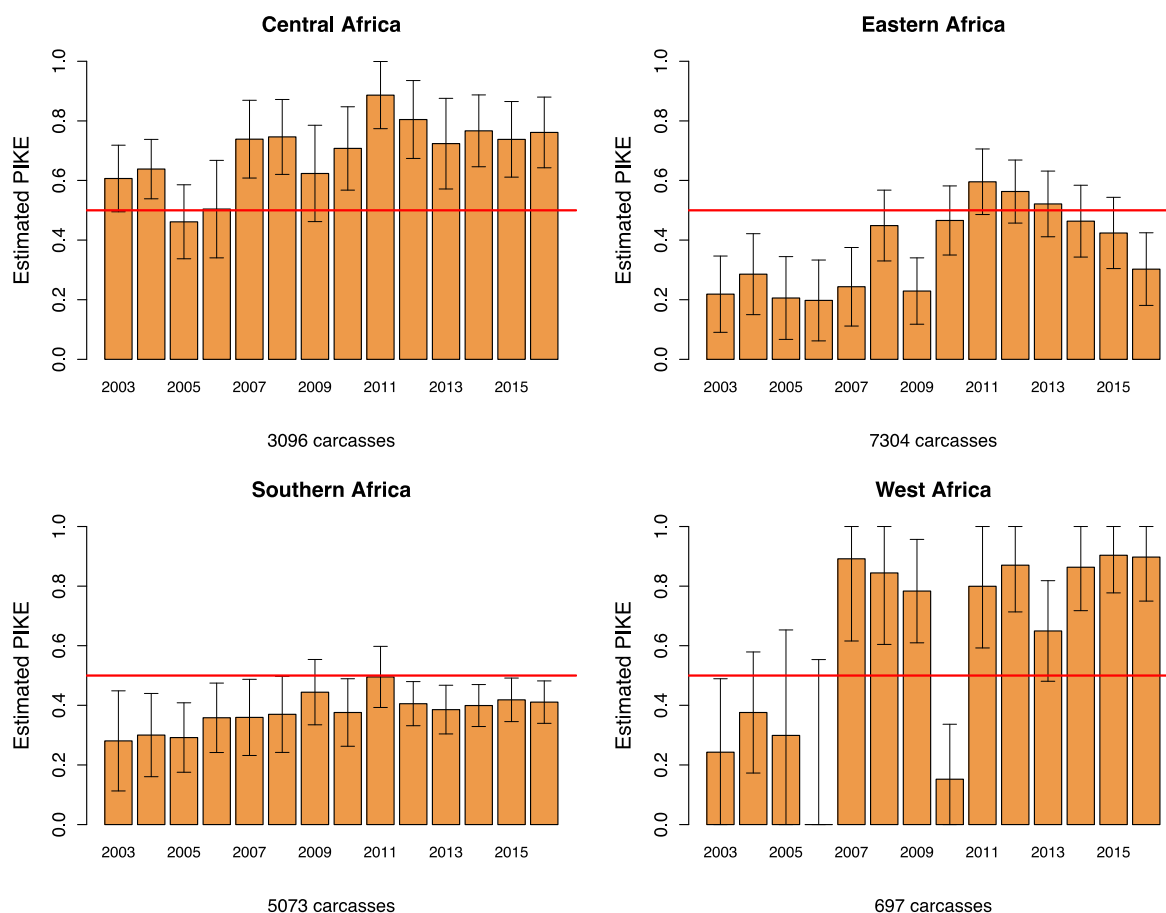


Figure 2. Sub-regional PIKE trends with annual 90 % confidence intervals. The numbers of carcasses on which the graphs are based are shown at the bottom of each graph.

Levels of and trends in illegal killing of elephants in Asia

Information on trends in levels of illegal killing of elephants in Asia up to 2012 was provided in the addendum to document CoP16 Doc. 53.1. This section provides an update on those trends, including data covering the period ending on 31 December 2015.

In late August 2016, records of 497 carcasses found in the ten MIKE sites in India in 2014 and 2015 were submitted to the MIKE programme by the MIKE National focal point for India. MIKE sites in the south of the country, which support over 50% of India's elephant population, had the highest number of carcass reports. More than 70% of the records (207 carcasses) were from Mysore Elephant Reserve (ER) in the state of Karnataka and Nilgiri ER in the state of Tamil Nadu (150 carcasses). Myanmar also submitted records of 36 carcasses found in 2015, but as none of those records were found in the designated MIKE sites, they were therefore not included in this analysis. No other carcass reports were received from Asian elephant range States. Bangladesh, Bhutan and Nepal reported that no carcasses had been found at their sites in 2014 or 2015.

The new data were combined with the records reported at CoP16 (CoP16 Doc. 53.1 Addendum) and additional records received from India for the years 2007-2013. Altogether, the data set for the trend analysis consists of 2,892 records of elephant carcasses found between 2003 and the end of 2015 at 23 MIKE sites in 11 range States in Asia (namely Bangladesh, Bhutan, Cambodia, China, Indonesia, India, Laos, Myanmar, Malaysia, Thailand, and Vietnam). Approximately 95% of the records were from MIKE sites in India, which holds the majority of the Asian elephant population. The MIKE site in China, Xishuangbanna Nature Reserve, reported the second largest number of records, with 1.6% of the total, followed by the two sites in Indonesia (Way Kambas and Bukit Barisan Selatan, both in Sumatra) at 1%. The remaining eight countries each contribute less than 1% to the total number of the records.

PIKE trends in Asia

The upper chart in Figure 3 shows estimated marginal mean annual PIKE values, with 90% confidence intervals, from 2003 to 2015, for MIKE sites in Asia from which reports have been received. While PIKE levels throughout the 2013-2015 period remain below the 0.5 level, the chart shows a steady increase in average levels of illegal killing of elephants between 2003 and 2006, followed by a decreasing trend up to 2008. The mean PIKE values from 2008 to 2013 remained relatively flat but seemed to take an upward turn thereafter. It remains to be seen whether this upward trend will be sustained. The mean PIKE value in 2015 was slightly lower than the highest value observed in 2006. It is important to note that the illegally killed elephants include elephants killed in conflict situations, which account for a substantial proportion of the total. For instance, 40% of the illegally killed elephants reported between 2007 and 2013 were females, which do not carry ivory.

The lower chart shows the total number carcasses reported, irrespective of cause of death. The number of carcasses from 2007 to 2013 remained relatively flat, with average value 286 carcasses per year, and from 2014 and 2015 shows a downward trend, with an average value of 248 carcasses per year. While the number of reporting sites has declined from 16 in earlier years to 8 in 2014 and 2015, the sites that did not report in 2014 and 2015 usually only reported small numbers of carcasses.

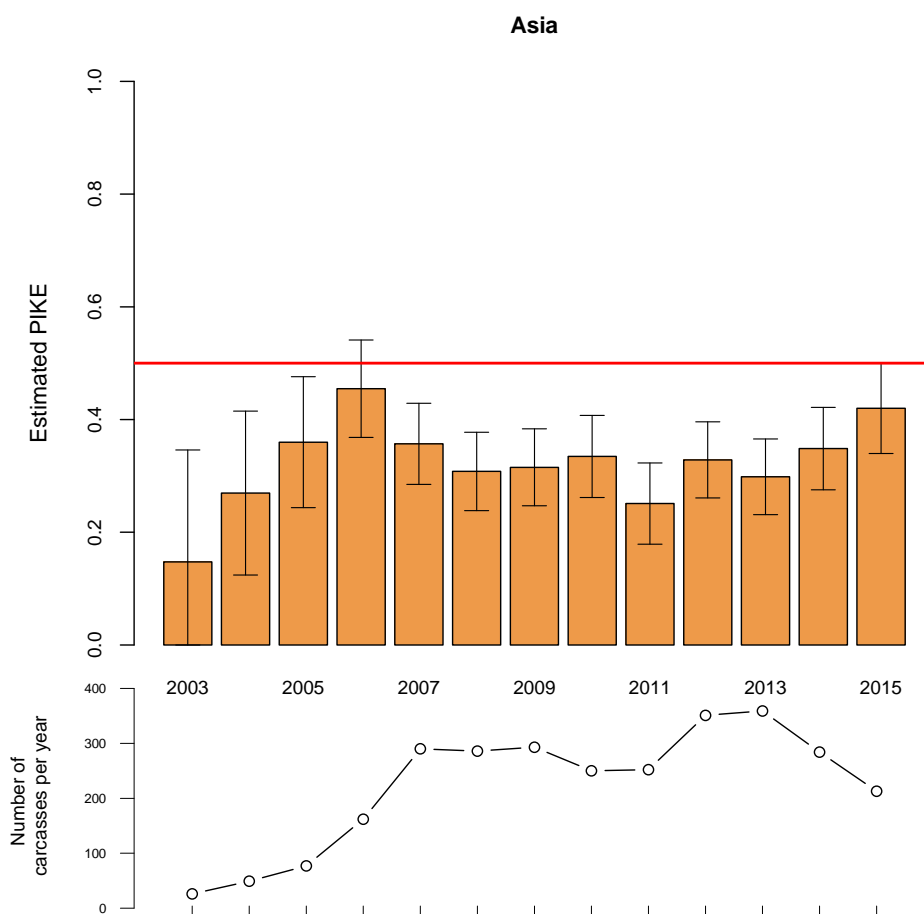


Figure 3. The upper chart shows the PIKE trend in Asia with 90% confidence intervals, based on 2,892 elephant carcasses (illegally killed or otherwise) reported to MIKE for the period 2003-2015. PIKE levels above the horizontal line at 0.5 (i.e. where half of dead elephants found are deemed to have been illegally killed) are cause for concern. The lower graph shows the total number of carcasses reported by year, irrespective of cause of death.

References

- Burn, R.W., Underwood, F.M. & Blanc, J., 2011. Global trends and factors associated with the illegal killing of elephants: a hierarchical Bayesian analysis of carcass encounter data. *PLoS ONE*, 6(9), p. e24165.
- Farge, E., 2015. Poaching threatens Mali's rare desert elephants: UN mission. *Reuters Africa*. Available at: <http://af.reuters.com/article/topNews/idAFKCN0S30MR20151009> [Accessed February 23, 2016].
- Wittemyer, G. et al., 2014. Illegal killing for ivory drives global decline in African elephants. *Proceedings of the National Academy of Sciences*, 111(36), pp.13117–13121.
- John R. Poulsen, Sally E. Koerner, Sarah Moore, Vincent P. Medjibe, Stephen Blake, Connie J. Clark, Mark Ella Akou, Michael Fay, Amelia Meier, Joseph Okouyi, Cooper Rosin, Lee J.T. White, 2017. Poaching empties critical Central African wilderness of forest elephants, *Current Biology*, Volume 27, Issue 4. Pages R134-R135, ISSN 0960-9822, <http://dx.doi.org/10.1016/j.cub.2017.01.023>.

Legal trade in ivory

This section has been prepared by UNEP-WCMC.

An overview of reported trade in *Loxodonta africana* using CITES annual report data over the period 2014-2015 has been produced by UNEP-WCMC. Trade data for 2016 are not yet available, as the deadline for submission of annual reports to CITES for 2016 is 31 October 2017. Annual reports have not yet been received at the time of writing (July 2017) for Botswana (2015) and Cameroon (2014 and 2015).

Reported legal trade in *Loxodonta africana* directly from African range states over the period 2014-2015 principally comprised wild-sourced hunting trophies (including tusks). Notable levels of direct trade in wild-sourced ivory carvings (7,889 kg of ivory carvings) were also recorded by countries of export, primarily as

personal possessions (purpose code 'P'). In total, for 2014 and 2015, African range states reported the direct export of 525 tusks (weight not reported) as well as 15,805 kg (tusk number not reported) of wild-sourced tusks (Table D1 and Table D2 in document SC69 Inf. XXX); countries of import recorded the import of 1,149 tusks and 220 kg of tusks. All trade in tusks by weight was from Zimbabwe, primarily reported as hunting trophies (purpose code 'H').

There is a large discrepancy in the number of tusks reported by importing countries when compared with those reported by African range states. This can in part be explained by Zimbabwe reporting exports primarily by weight, whereas countries of import largely reported trade from Zimbabwe in number of tusks. Additionally, a permit analysis identified some cases where such discrepancies occurred due to year-end trade², or discrepancies in the term code reported, for example one trading partner reporting trade as 'trophies' while the other reported 'tusks'.

When the number of individual elephants represented by the trade is estimated (by assuming that 2 tusks equal one individual), exports (as reported by range states that had provided annual reports) decreased between 2014 and 2015 for all exporters with the exception of Namibia. The greatest decrease was reported by the United Republic of Tanzania, declining 97% from an estimated 36 individuals in 2014 to one in 2015. This is likely to be due to the two main import markets (the EU and the United States) imposing import restrictions, with the US not permitting trade in elephants taken from the wild in the calendar year 2014 (see notification 2014/037), and the EU temporarily suspending imports of *Loxodonta africana* trophies in July 2015, with the restriction being lifted in June 2017. Exports from Namibia increased by 21% between 2014 and 2015, from an estimated 68 individuals to 82 individuals.

When the declared export quotas for tusks as sport-hunted trophies are compared with both the exporter-reported and importer-reported data for tusks and trophies (assuming that one trophy includes two tusks) no exporting range State appears to have exceeded the annual export quotas set (Table D3 (quotas) and Table D4 (trophies) in document SC69 Inf. XXX).

Reporting issues

The analysis of hunting trophy data is complicated by the variety of ways in which hunting trophies can be reported. The *Guidelines for the preparation and submission of CITES annual reports*³ states that all the trophy parts of one animal, e.g. an elephant's two tusks, four feet, two ears and one tail, constitute one 'trophy' if they are exported together on the same permit. However, in practice, many Parties do not follow these Guidelines consistently and this can lead to double-counting of trophies. Standardisation in reporting of hunting trophies through application of the Guidelines, in particular for species such as *Loxodonta africana* where export quotas have been established, is crucial to assessing compliance with the provisions of the Convention. The most recent version of the Guidelines, updated in January 2017, include further clarifications on the reporting of hunting trophies.

No exporting Party appeared to exceed their quota for *Loxodonta africana* in 2014 or 2015. However, previous analyses of the serial numbers provided within annual reports have provided valuable insight into the verification of quota compliance (see SC66 Doc 47.1), and this information could be collected more systematically through the CITES Trade Database to support CITES implementation. Adoption of electronic permitting and automated data transfer of trade data to the CITES Trade Database in near real-time would facilitate this, and should be considered as a means for enhancing transparency and traceability for all species with quotas and tagging/marking systems. The Parties have adopted systems for near-real time checking of caviar permits in the past and so have precedents. These compliance considerations may be relevant for continued Standing Committee discussions.

Summaries of trade recorded in the CITES Trade Database, compiled by UNEP-WCMC, are provided in Tables D1, D2 and D4 in document SC69 Inf. XXX.

² Where the exporter reports the permit issued at the end of one year, and the importer reports the transaction having occurred in the next year

³ See CITES Notification to the Parties No. 2017/019.

African Elephant Fund (AEF) and implementation of the African Elephant Action Plan (AEAP)

This section has been prepared and submitted by Kenya as the Chair of the African Elephant Fund Steering Committee (AEFSC) and with support of United Nations Environment Programme (UN Environment) as the administrator of the African Elephant Fund (AEF) and Secretariat of the AEFSC.

The report is an update by the AEFSC on the implementation of the African Elephant Action Plan (AEAP) and administration of the African Elephant Fund (AEF) and covers the period between SC66 (11-15 January 2016) and August 4, 2017, prior to SC69. Reporting for the period from when the AEAP was adopted in 2010 and the AEF was established to support implementation of the Action Plan, until January 2016 is contained in SC66Doc 47.1 (pp.11-14).

This report is the third of its kind, the first one having been given by South Africa as Chair of the AEFSC, at the SC 65 meeting (July 2015) for the period 2011 - July 2014, and the second report by Kenya as Chair of the AEFSC, at the SC66 meeting (January 2016) for the period August 2014 - January 2016.

During the reporting period (between February 2016 and this present meeting), the AEFSC has held two meetings; in Libreville (Gabon) in June 2016 and in Sandton Conference Centre, Johannesburg (South Africa) on the margins of the 17th meeting of the Conference of the Parties to CITES (September - October 2016). These meetings reviewed progress in implementation of the Action Plan and considered and approved project proposals submitted to the Fund:

Membership of the African Elephant Fund Steering Committee

The current membership of the AEFSC remains as reported in column 3 of Table 1 in SC66 Doc 47.1

Projects funded from the Fund

In addition to the funded projects presented in Table 2 of document SC66Doc. 47.1 seven more projects were approved and funded for implementation during the reporting period. These projects are listed in the table one.

Table 1. List of projects approved at the 6th meeting (Geneva, January 2016) and at the 7th meeting (Libreville, June 2016) of AEFSC.

Sub-region	Beneficiary Country	Amount in USD
EAST AFRICA:		
CENTRAL AFRICA:	Central Africa Republic	46,935
	Gabon	108,700
SOUTHERN AFRICA:	Zambia Project 1n	21,250
	Zambia Project 2	60,000
WEST AFRICA:	Ghana	156,786
	Mali	110,950
	Côte d'Ivoire	90,160

The total number of projects funded by the AEF since its establishment is therefore 36. Details of the funded projects can be accessed on the link: <http://www.africanelephantfund.org/page/i/aef-projects>.

As at the time of preparing this report (August 2017), the AEFSC had received one more final report (from Gabon), in addition to the eight country reports reported in document SC66 Doc. 47.1 on the implementation of the projects funded from the Fund, and whose project implementation period has expired.

These reports have been uploaded onto the Fund's website and can be found at the link: <http://www.africanelephantfund.org/page/i/range-state-reports>.

In its report to SC66, the AEFSC did indicate that the administration of the AEF had faced a number of challenges attributed to the range States, donors and the Umoja System, the financial information system at UN Environment. These challenges have however been addressed. This means range States are now ready to submit funding proposals as soon as call for proposals are send out, the donors have restructured their

processes for providing funding to the Fund, and to a great extent, UN Environment has streamlined functioning of the Umoja system.

Donor funding pledged/received since January 2016 reporting

In addition to the Donor funding received to the Fund as at November 2015 and reported in Table 4 of the document SC66 Doc 47.1, the Fund has received donations as follows:

Table 2. Donor funding

Donor	Amount
Dutch (The Netherlands) Government	USD.124, 766 (120,000 EUR.)
Government of the Federal Republic of German	USD. 553,169 (515,000 EUR.)
Government of France	USD. 87,579
Government of Belgium	USD. 20,920
European Commission	EUR. 1,000,000

Details of the total funding received at the Fund since its establishment and as at 5 April 2017 can be accessed on the link: <http://www.africanelephantfund.org/page/i/funding>

It should be noted that the funds from the Government of the Federal Republic of Germany are a full financing commitment for projects approved during the 6th meeting (Geneva Switzerland, 12-15 January 2016) and 7th meeting (Libreville, Gabon, 22-23 June 2016) as follows:

- a) Reducing human elephant conflict through improved monitoring, stakeholder engagement and law enforcement – Ghana, USD 156,786
- b) Military training for Gabon’s Park Rangers – Gabon, USD 108,700
- c) Enhancing effectiveness of law enforcement monitoring and analysis systems in Zambia’s elephant range areas – Zambia, USD 60,000 (see Table 2 on Funded projects)
- d) Strengthening law enforcement capacity in close collaboration with local communities to protect the Gourma Elephants – Mali, USD 110,950
- e) Improvement of knowledge about elephants involved in conflicts with human – Côte d'Ivoire, USD 90,160.

The 8th meeting (Johannesburg, South Africa, 5 October 2016) of the AEFSC was held to finalize approvals for funding for the projects considered during the 6th and 7th meeting pending availability of funds committed by the donors.

The funding of 1 million Euros from the European Commission (part of the EU funding under the EU Project *CITES Trees and African Elephants*) towards the African Elephant Fund is yet to be received but all the prerequisite documentation and processes for the receipt of the funds have been finalized between the Commission and the CITES Secretariat. Funding pledged by Government of Belgium is yet to be received at the Fund.

The Chair, on behalf of the AEFSC and all African elephant range States, would like to appreciate and thank the Governments of Netherlands, Germany, France, Belgium and the European Commission for contributing or committing the needed financial resources towards implementation of the African Elephant Action Plan and securing the future survival of the African elephant across its range. The AEFSC appeals to more Parties, donors, IGOs and NGOs to support the implementation of the African Elephant Action Plan by contributing to the Fund.

Visibility of the AEF and AEFSC

At its 6th meeting in Libreville, Gabon (June 2016), the AEFSC agreed to take advantage of the 17th meeting of the Conference of the Parties to CITES to raise its profile through a side event, highlighting the existence of the AEF and its support towards the implementation of the AEAP and increasing the visibility of the Steering Committee.

The existence of the AEF, the objectives of the AEAP and the roles of the AEFSC in the administration of the Fund and monitoring of the implementation of the AEF-funded projects in the beneficiary range States were exhibited during the side event at the 17th meeting of the Conference of the Parties to CITES on 4 October 2017. AEF-branded materials and informational pamphlets were distributed.

The side event (dubbed *The Elephant in the Room: A Coherent Approach to the Implementation of the African Elephant Action Plan*) centered on the activities of the African elephant range States' projects funded by the AEF on the implementation of the AEAP. The event served as an arena to assess the impact of the AEAP and the AEF on the conservation and management of the African elephant populations. It also set the stage for deeper discussions among the range States and donors for the development of strategic mechanisms to increase collaboration on AEAP implementation and to meet targets set out in the Action Plan.

Outcomes of the side event include enhanced synergies through information-sharing and provision of technical expertise to enhance delivery of the priorities and strategies outlined in the AEAP. The 17th meeting of the Conference of the Parties to CITES was a crucial forum for Parties and donors to share their views on conservation strategies, implementation of wildlife management initiatives and wildlife protection and trade.

During the meetings, the AEFSC solidified its commitment to working towards implementation of the AEAP. In doing so, the AEFSC will continue to support range States benefiting from the AEF to effectively implement the funded projects and on behalf of the range States to continue seeking funding for the AEF from Governments and Donors, from where the range States can access resources towards implementation of the AEAP.

Next meetings of the AEFSC

The AEFSC has considered that it would be a cost effective and prudent use of the limited resources to take advantage of meetings of the CITES Standing Committee and the Conference of the Parties and hold its meetings on the sidelines.

The Committee held a very productive meeting on the margins of the last Conference of the Parties and has considered taking advantage of the SC69 meeting to meet and participate as observers, representatives of other African elephant range States present, and to evaluate funding proposals for the next cycle of funding. The meeting will also be an opportunity for the AEFSC to receive updates from the range States and discuss progress on the implementation of the African Elephant Action Plan in the individual countries, while providing information on the administration of the Fund.

Conclusions

The Standing Committee is requested to note the progress made by the AEFSC in overseeing the implementation of the AEAP and management of the AEF and call upon governments, donors, IGOs and NGOs to contribute financial resources to the Fund to support implementation of the AEAP.

Illegal Trade in Elephant Specimens

Data collection

It is a concern that the majority of CITES Parties are delivering elephant product seizure data for inclusion in ETIS late and failing to implement the recommendation in Annex 1 of Resolution Conf. 10.10 (Rev. CoP17) which states that:

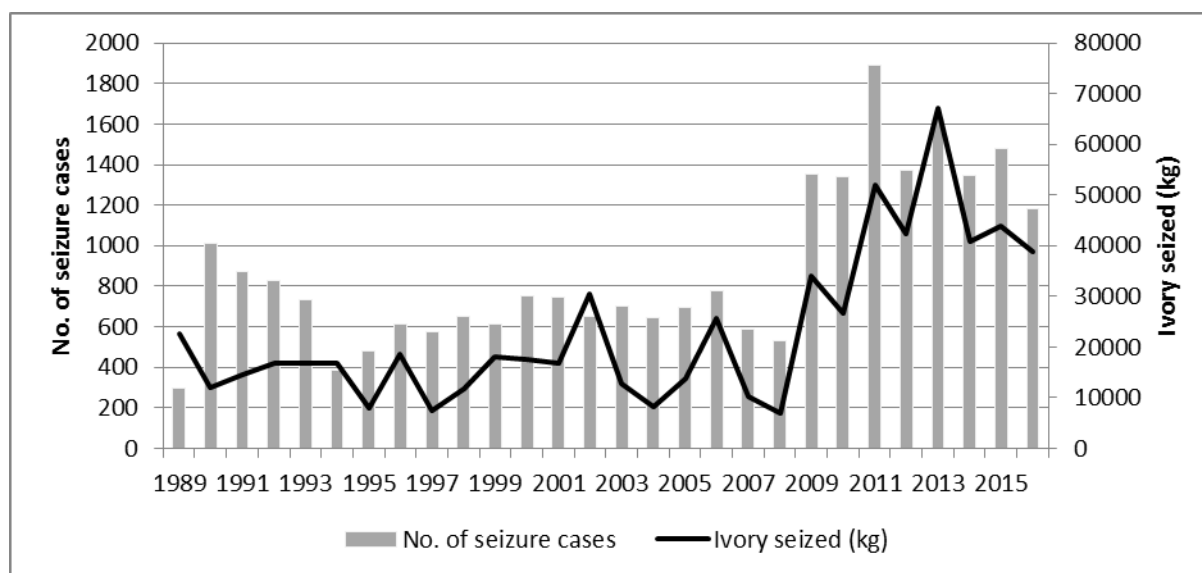
All Parties, through their CITES Management Authorities, following liaison with appropriate law enforcement agencies, should provide information on seizures and confiscations of ivory or other elephant specimens in the prescribed formats either to the Secretariat or directly to TRAFFIC within 90 days of their occurrence. In addition, law enforcement agencies in States not-party to the Convention are requested to provide similar information.

Accordingly, in theory, all elephant product seizure data should be with ETIS by the end of March of any given year. In fact, before reaching 'critical mass' in terms of having enough data for this analysis, datasets from many countries for 2016 were still being received well into August 2017 which delayed analysis considerably. In many cases, Parties are only submitting data as much as 18 to 24 months after the seizures occurred, a fact that seriously inhibits the ability of ETIS to operate and track illegal ivory trade developments in a timely

manner. There is also cause for concern about the quality and completeness of data sets for many important countries.

As of 17 August 2017, there were 27,525 records in ETIS, of which 24,969 represented ivory seizures, whilst the remainder comprised non-ivory elephant products. Figure x1 illustrates the number of ivory seizure cases and the estimated weight of ivory seized as raw, unadjusted data in each year from 1989 to 2016. Because of inherent bias in the raw data, Figure x1 cannot be interpreted as a trend, nor is it suggestive of absolute quantities of ivory seized over time.

Figure x1: Estimated weight of ivory and number of seizure cases by year, 1989 - 2016 (ETIS raw data, 17 August 2017)

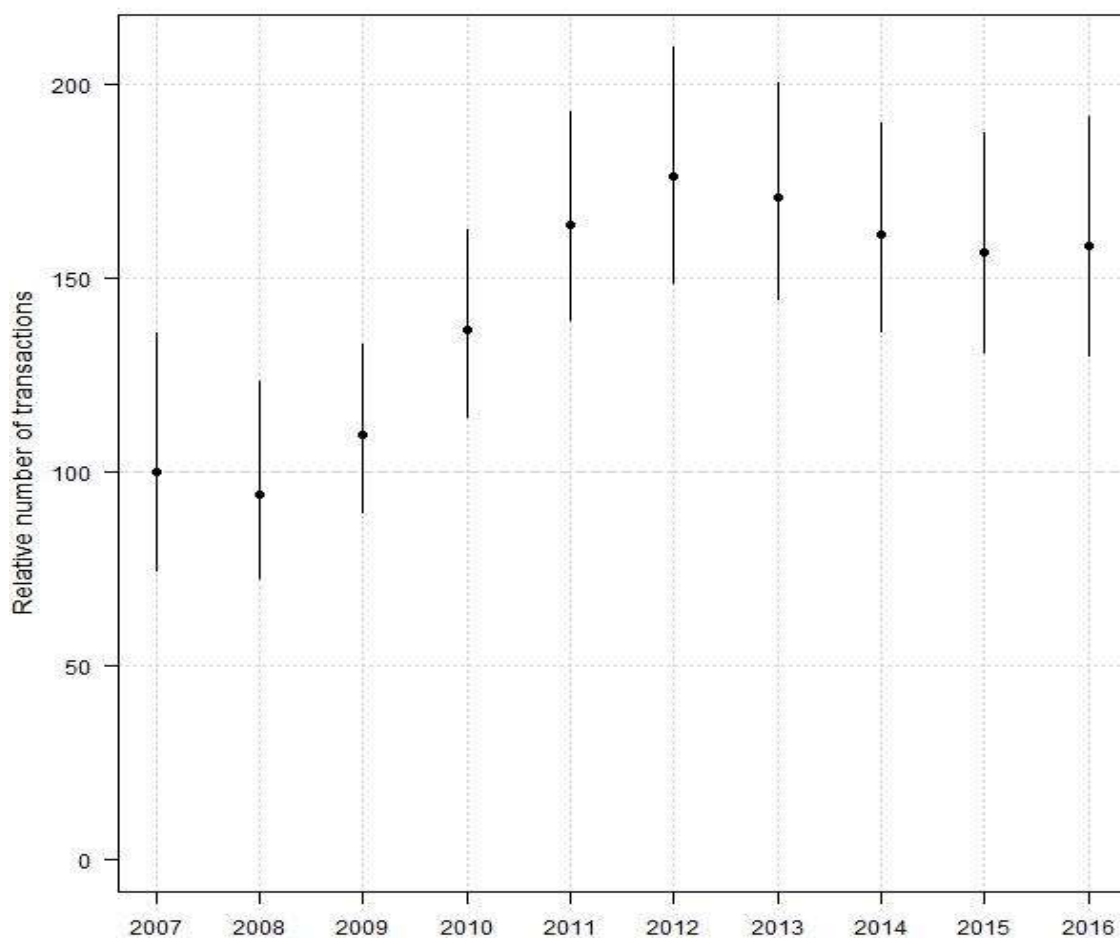


Trends and levels of illegal ivory trade

Since the trend in illegal ivory trade was previously reported in CoP17 Doc. 57.6 (Rev. 1) Addendum (Milliken et al., 2016a), an additional 1,429 seizure records have been added to the Elephant Trade Information System (ETIS), including 1,185 cases for 2016, another 170 cases for 2015 and 74 cases collectively in the years 2007-2014. This new analysis is based upon the standard methodology described in Underwood et al., 2013, including the modifications and refinements noted in the ETIS report to the 17th meeting of the CITES Conference of the Parties (CoP17) (Milliken et al., 2016b). The analysis comprised 12,874 ivory seizure records from 62 countries or territories which were divided by ivory type (i.e. raw and worked) and classified into three weight classes (i.e. small: less than 10 kg; medium: between 10 kg and less than 100 kg; and large: equal to or greater than 100 kg); however, as was the case previously, the medium and large worked ivory weight classes were combined to produce a more robust result. In cases where only the number of pieces, rather than the weight, of the seizure were provided in the raw data, weights were estimated from the number of pieces by using the model constructed for the CoP17 analysis. Similarly, the same bias-correcting variables assessing seizure and reporting rates were employed as in the CoP17 analysis, with the results smoothed to estimate overall trade patterns with 90% confidence intervals.

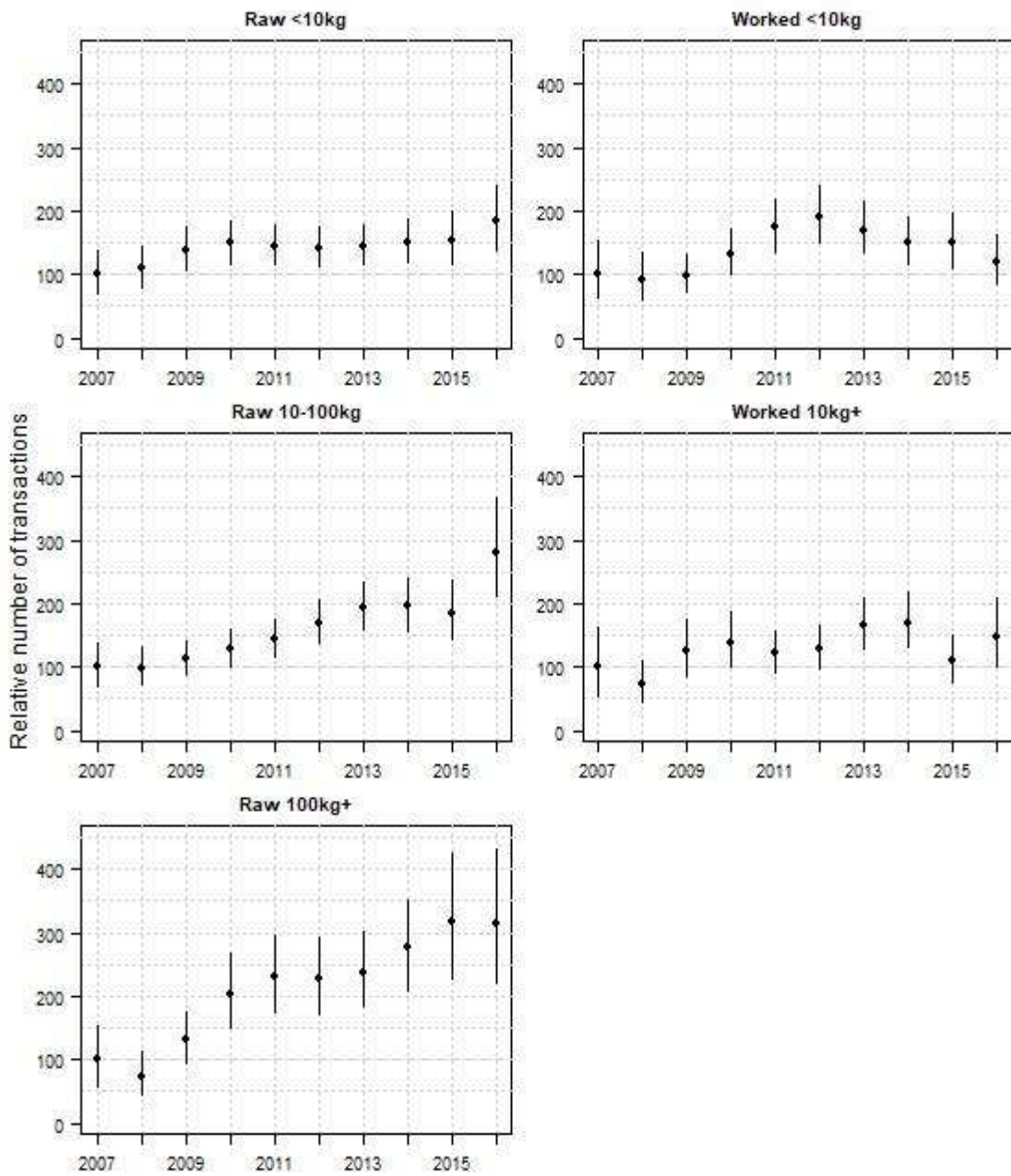
The Transaction Index presented in Figure x2 provides a relative measure of global illegal ivory trade activity in the decade ending in 2016, with 2007 set to 100 to serve as the baseline. The best estimate of the scale of illegal trade activity in each year is represented by the bold dot with the vertical lines indicating 90% confidence intervals. Overall, the Transaction Index shows that illegal ivory trade activity continues at the same relative high levels over the last six years. The relative stability of illegal trade at high levels can be seen in the confidence intervals for the six most recent years, which continue to overlap considerably.

Figure x2: Mean estimate of illegal ivory trade activity, 2007 - 2016, showing 90% confidence intervals (ETIS Transaction Index, 17 August 2017)



Looking at the trends associated with the individual ivory weight classes (Figure x3), it is worth noting that in 2016 all raw ivory weight classes showed growth or remained constant at high levels, with raw ivory activity contributing far more to the Transaction Index trend than in any of the previous analyses since 2007. In particular, the significant increase between 2015 and 2016 in the medium raw ivory weight class, together with little change in the large ivory weight class, which has been steadily increasing since 2008, are important factors keeping the overall Transaction Index at a high level. As will be described elsewhere in this report, raw ivory transactions in these two weight classes frequently capture the illegal ivory trade activity of transnational organised criminal syndicates. On the other hand, the small worked ivory weight class – where ‘personal effects’-type seizures from tourists are generally classified – shows a continuing decline. However, this result ultimately has little overall effect on the trend of the Transaction Index, because of increases in other weight classes, such as the medium raw ivory class.

Figure x3: Mean estimate for each ivory weight class, 2007-2016, showing 90% confidence intervals (ETIS Transaction Index, 17 August 2017)



Turning to the Weight Index, the current analysis continues the steady upward trend in terms of the total estimated weight of the ivory in illegal trade, represented by activity captured in the Transaction Index (Figure x4). In this analysis, 2016 is the year in which the most ivory by weight was illegally traded, although the confidence interval is estimated to be wide. The upward trend is unbroken since 2008 and the overall weight of ivory in illegal trade now is nearly three times greater than was observed in 2007.

Figure x4: Estimated mean of weight of illegal ivory trade, 2007-2016 (ETIS Weight Index, 17 August 2017)

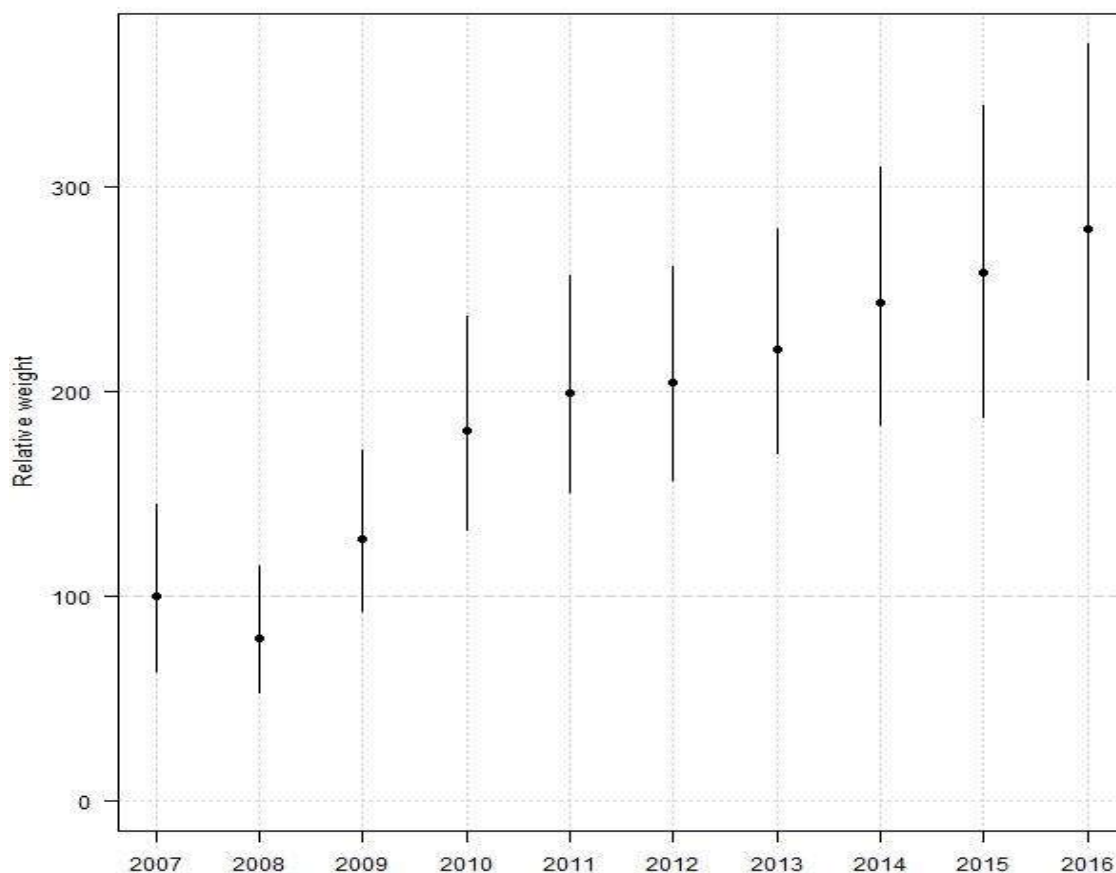
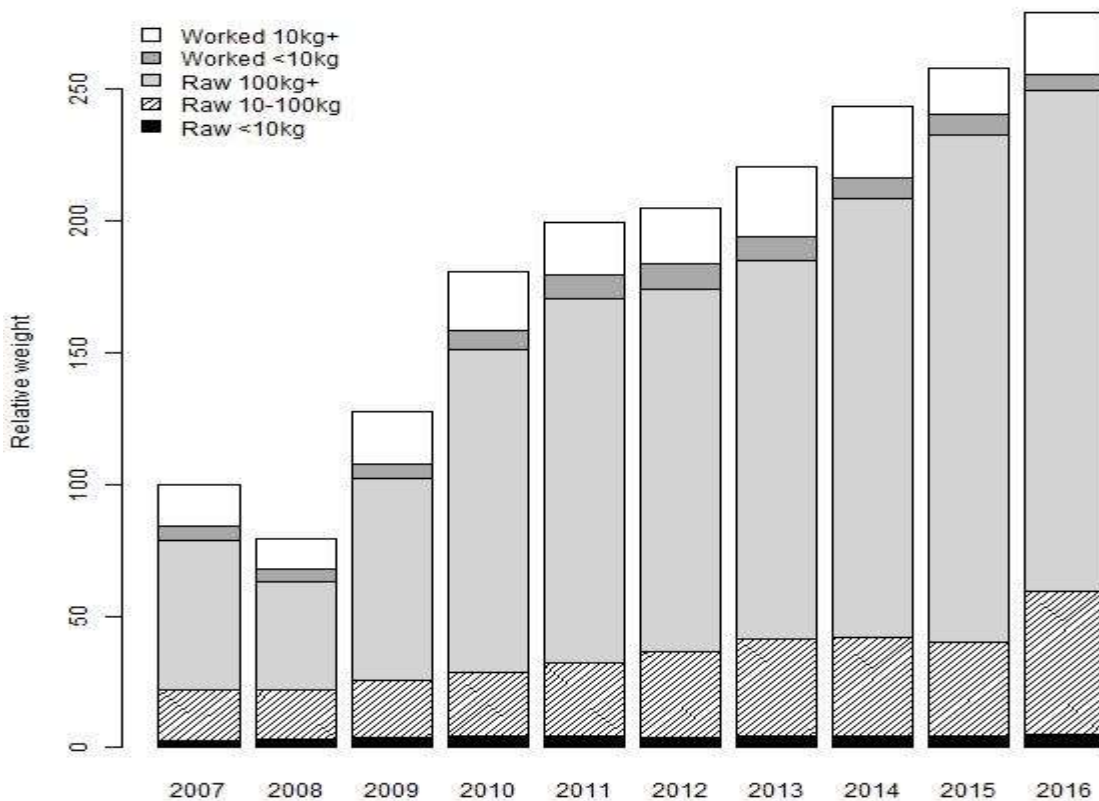


Figure x5 shows the relative estimated contribution of each weight class to the quantity of ivory in illegal trade for each year. Although far more numerous, worked ivory transactions add relatively little weight to the overall quantity of illegal ivory in trade. As in every previous assessment of the Weight Index, the large raw ivory weight class essentially drives the estimated weight trend, with the greatest quantity of ivory falling in this category. However, in 2016, it is also evident that the medium raw ivory weight class has greatly increased the contribution it makes to the overall trend. It is noted that the weight per seizure may be decreasing (see data summaries in the next section). The current modelling of the Weights Index, in line with the model used for CoP17, does not capture changes in weight per seizure over time. This issue needs further investigation.

Figure x5: Estimated mean of weight of illegal ivory trade by weight class, 2007-2016 (ETIS Weight Index, 17 August 2017)



Descriptions of Data

To minimize the risk of detection and maximize profits, it is widely appreciated that criminal syndicates are constantly adapting in the face of law enforcement actions and other developments (Falhman, 2015). In this regard, descriptions of patterns of trade observed in the raw data can be useful in indicating potential changes in underlying ivory trade dynamics that could present additional challenges to existing law enforcement strategies and tactics going forward. The issues presented in this section are based on data that have not been subjected to bias adjustment; this means that increases in reported seizures might not necessarily represent increased trade but could be the result of increased law enforcement or better reporting of seizure data to ETIS. The issues raised in this section therefore require further research and examination. However, the precautionary principle warrants highlighting areas of concern, despite the recognised caveats in how to interpret the results presented in simple data summaries.

Large-scale ivory seizures

ETIS continues to track large-scale ivory seizures (as raw data without bias adjustment), which are defined as 500 kg or more of raw or worked ivory in raw ivory equivalent (RIE) terms seized in a single illegal consignment; (RIE entails converting the weight of worked ivory products into raw ivory values to account for the loss of ivory during processing). Large-scale ivory seizures form a subset within the raw ivory large weight class, an increasing trend in which has been a key force in driving the overall trend throughout this period (Milliken et al., 2016b; this analysis). Large-scale ivory seizures are important because they provide a useful measure for understanding the involvement of transnational organized criminal syndicates in movements of illegal ivory. ETIS has tracked these seizures since the analysis presented to CITES CoP15 in March 2010.

Since CoP16 in March 2013, forensic examination of large-scale ivory seizures to elicit the origin of the ivory in question has also been mandated by the Parties in Resolution Conf. 10.10 (Rev. CoP17). Further, Decision 16.83 at CoP16 recommended that large-scale seizure cases that occurred within the 24-month period from the date that the decision took effect (more specifically, seizures from 12 June 2011 onwards) should also retroactively be forensically examined. From that date through 2016, 109 large-scale ivory seizures have been recorded in ETIS (including one in 2015 and one in 2016 that were only verified following the present trend

analysis). Since the analysis submitted to CoP17 (Milliken et al., 2016b), where it was reported that only 11 out of 61 large-scale ivory seizure cases (18%) had been forensically examined, another 44 large-scale ivory seizures have been entered into ETIS; the results of forensic examination have not been communicated to TRAFFIC for any of these cases, nor have forensic reports concerning any of the previous unexamined cases been received. This indicates that, overall, only 10% of the large-scale seizure cases are being forensically examined pursuant to the mandate in Resolution Conf. 10.10 (Rev. CoP17).

Figure x6: Number, estimated, and smoothed weights of large-scale (500+ kg) ivory seizures, 2000-2016 (ETIS raw data, 17 August 2017)

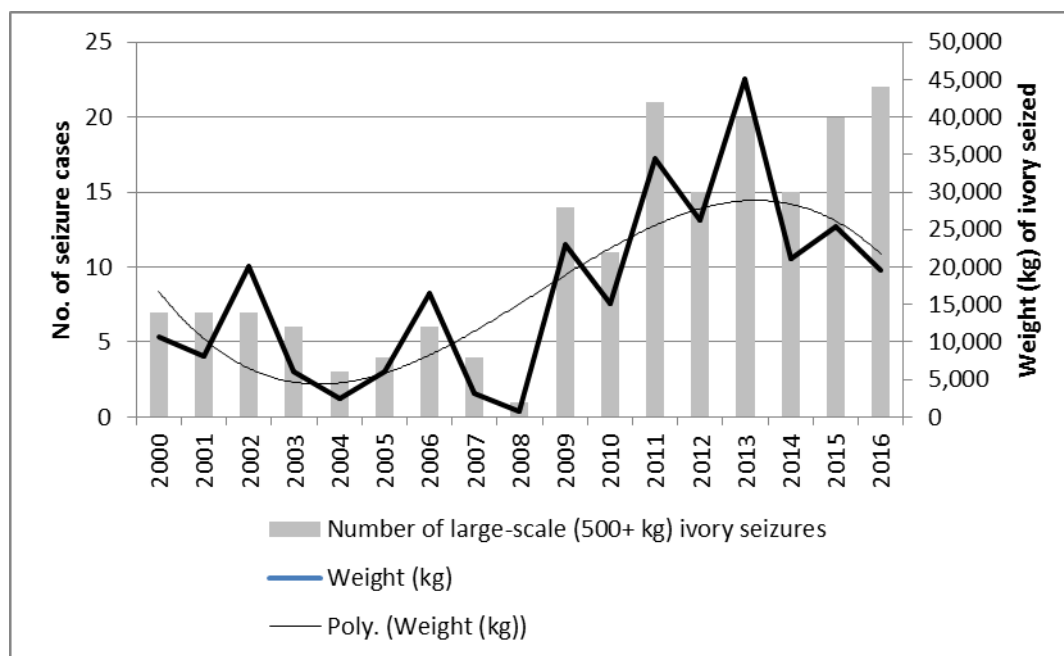


Figure x6 presents the raw number and estimated weights of large-scale ivory seizures since 2000. It can be seen that both the number and weight of reported large-scale ivory seizures substantially increased from 2009 onwards, with the largest number of such seizures occurring in 2016 (i.e. 22) even as the estimated weight of these transactions dropped to the lowest point in six years. Since 2013, the data suggest a decline in the quantity of ivory within a given large-scale seizure. One explanation could be that criminal syndicates are reducing the size of the largest shipments owing to the severe economic losses engendered by the interdiction of very large consignments, as was reported in Central Africa concerning the motivations of expatriate Asian ivory exporters (Nkoke et al., 2017). Another explanation could be greater diversification in the mode of transport. Generally speaking, air cargo is more expensive and has stricter weight limitations than shipping by sea but is usually not associated with the movement of large shipments of ivory. Finally, localized market forces concerning supply and demand at the time of exportation could also be another factor.

A comparison of 113 large-scale ivory seizure cases that are almost equally divided between two three-year periods shows an apparent shift in mode of transport, with air freight increasing from only 7% in 2011-2013 to 30% in 2014-2016, while shipments by sea dropped from 70% to 44% and seizures made by land conveyances marginally increased over the same period. These tentative results require further assessment but, whilst containerized sea freight still predominates in terms of moving large-scale shipments of ivory, illegal ivory consignments also appear to be increasingly moved as air cargo between Africa and Asia. It is acknowledged that various government and NGO initiatives are addressing this issue but perhaps more needs to be done. Law enforcement strategies that subject air cargo along certain trade routes to targeting and risk assessment need to become an active component in combatting illegal trade in elephant ivory in places where that is not already the case, especially at key air transshipment hubs along the trade chains connecting Africa with Asian destinations.

Worked ivory seizures coming from Africa

Another apparent emerging change in illegal ivory trade dynamics concerns evidence of increased ivory processing from bases within Africa for the purpose of exporting finished products to Asian markets. Assessing raw, unadjusted ETIS data associated with seizures of commercial quantities of worked ivory in the medium/large weight class serves to support these allegations. Comparing international trade transactions from Africa that were transported by air, post or sea in two three-year periods of time, 2014-2016 with 2011-2013, suggests that the weight of such seizures has roughly doubled between time periods. These seizures

represent only 39% of all worked ivory product seizures in the medium/large weight class of 10+ kg because not all seizure records report all or part of the trade route or the method of transportation. This issue needs to be subjected to further research.

Table x1: Country of origin or export behind commercial movements of worked ivory products (10+ kg) by air, post or sea from sub-Saharan Africa, 2014-2016 compared with 2011-2013 (ETIS raw data, 17 August 2017)

Country	2014 – 2016		2011 – 2013		Total Both Periods	
	No. of Seizures	Wt. (kg) of Seizures	No. of Seizures	Wt. (kg) of Seizures	No. of Seizures	Wt. (kg) of Seizures
Nigeria	41	769	10	224	51	994
Côte d'Ivoire	14	595	6	126	20	721
Mozambique	5	306	8	299	13	605
Angola	7	285	5	218	12	503
South Africa	7	278	8	211	15	489
Kenya	5	336	6	129	11	465
Zimbabwe	20	404	3	36	23	440
Ethiopia	10	350	4	84	14	434
Uganda	5	160	3	171	8	331
Malawi	4	130	2	54	6	184
Democratic Republic of Congo	3	90	5	86	8	177
Others*	16	393	17	364	33	757
Total	137	4,098	77	2,002	214	6,100

Others* includes: Benin, Burundi, Congo, Cameroon, Djibouti, Ghana, Guinea, Equatorial Guinea, Mali, Namibia, Sudan, South Sudan, Togo, Tanzania

These seizure data identify Nigeria, Côte d'Ivoire, Mozambique, Angola, South Africa, Kenya, Zimbabwe, Ethiopia, Uganda, Malawi and the Democratic Republic of the Congo as the countries of origin and/or export behind the greatest numbers of seizures and quantities of worked ivory products moving out of Africa mostly through air transport; (in fact, for some countries with exceptionally small national elephant populations, such as Nigeria and Côte d'Ivoire in West Africa, it is highly likely that the exported ivory originates from other countries or even other sub-regions). Whether ivory processing operations for foreign export are occurring in all of these countries remains to be established, but Nigeria, Côte d'Ivoire, Mozambique, Angola, South Africa, Kenya, Zimbabwe, Ethiopia, Uganda, Malawi and the Democratic Republic of the Congo, as well as Congo were all previously identified as having ivory carving industries that appeared to be servicing ivory demand in Asia with the production of key generic products such as bangles, name seals and chopsticks (Milliken et al., 2016b). Much of this trade involves the use of couriers, predominantly Asian nationals, who in recent years have frequently been detected wearing purposely designed clothing to conceal ivory on the body (see the Hong Kong Customs website for numerous examples, including http://www.customs.gov.hk/en/publication_press/press/index_id_1401.html). A considerable number of this type of smuggling has entailed air transit through the United Arab Emirates (i.e. 48 cases collectively over both periods, involving 1,273 kg of worked ivory products), mostly originating from Côte d'Ivoire, Nigeria and Zimbabwe. Likewise, other cases transited through Qatar (i.e. eight cases involving 421 kg), with most coming from Nigeria and Mozambique. All of these seizures ultimately occurred further along the trade chain in Asia, having passed through the United Arab Emirates and Qatar without interruption.

Table x2: Country of destination for commercial movements of worked ivory products (10+ kg) by air, post or sea from sub-Saharan Africa, 2014-2016 compared with 2011-2013 (ETIS raw data, 17 August 2017)

Country	2014 – 2016		2011 – 2013		Total Both Periods	
	No. of Seizures	Wt. (kg) of Seizures	No. of Seizures	Wt. (kg) of Seizures	No. of Seizures	Wt. (kg) of Seizures
China (incl. Hong Kong/Macao SAR)	105	2,299	57	1,377	162	3,675

Viet Nam	13	862	6	117	19	979
Other Asia*	11	711	7	306	18	1,017
Egypt	7	201	2	37	9	238
Europe/Middle East^	1	25	5	166	6	191
Total	137	4,098	77	2,002	214	6,100

Other Asia* includes: Cambodia, Indonesia, Malaysia, Thailand and Singapore

Europe/Middle East^ includes: France, Portugal, Romania, Turkey

Using the same dataset as above, in terms of destination, nearly three-quarters of this trade in worked ivory products was destined for the greater China market, including Special Administrative Regions (SAR) in Hong Kong and Macao; this trade accounted for over 60% of the total weight in both periods. The next greatest destination for this trade concerned Viet Nam, which represented 8% of the total number of seizures and 16% of the total weight. Egypt, which has an unregulated domestic ivory industry of its own (Martin & Vigne, 2011), was the most important non-Asian destination.

Discussion

With little apparent change in the level of illegal ivory trade transactions globally and an increasing quantity of ivory involved in these transactions, this analysis constitutes a rather discouraging result. Since 2013, there has been a concerted emphasis on combatting illegal ivory trade by the global conservation community, including the execution of the National Ivory Action Plan (NIAP) process under the direction of the CITES Standing Committee. Currently, 20 countries or territories have developed NIAPs to address a range of issues which affect elephant poaching and ivory trafficking and many have made significant progress in implementing a range of actions to enhance legislation, law enforcement, international collaboration, public awareness and demand reduction. A recent World Bank assessment of international funding to combat illegal wildlife trade (IWT) from January 2010 through June 2016 for Africa and Asia found that USD1.3 billion, or approximately USD190 million annually, was being committed by 24 major donors globally (World Bank, 2016). Unfortunately, the illegal ivory trade trend through 2016 is not yet responding positively to these developments. African elephants remain in crisis and this analysis should be a warning that more needs to be done to curtail ivory trafficking and illegal ivory markets.

A related issue worth noting is that the pattern of an increasing quantity of ivory moving into illegal trade (Figures x4 and x5) data, contrasts with the incremental downward trend observed for elephant poaching through the CITES MIKE programme. In this regard, since 2011, the proportion of illegally killed elephants (PIKE), the principal metric for estimating elephant poaching attrition in Africa, has shown decline even as overall levels remain unsustainable throughout this period (see Figure 1 in the MIKE report). To some degree, a contrary pattern in the quantity of ivory estimated in the ETIS analysis may result from time lags associated with the illegal killing of elephants and the trafficking of their tusks. Another explanation concerns the entry of previously stockpiled ivory into trade, augmenting that which is obtained from the illegal killing documented by MIKE. It is now known, for example, that the ivory tusks associated with the Burundi stockpile (once Africa's largest, longstanding, documented assemblage of illicit ivory) have entered illegal trade in recent years. Originally registered under CITES in 1989, the Burundi stockpile was audited and re-registered in 2004 by TRAFFIC and CITES/MIKE on behalf of the CITES Secretariat; at that time it was found to total 15,485 tusks, weighing 83,978 kg (Milledge & Nuwamanya, 2004). Since March 2015, TRAFFIC has documented ivory seizures on four occasions in Uganda and South Sudan in which ivory tusks or pieces were found bearing the distinctive Burundi ivory markings from 1989. The current status of the Burundi stockpile remains unknown and needs to be reported on by the government of Burundi, but potentially an extremely large quantity of this ivory may have entered illegal trade. And finally, ongoing ivory stock thefts, for example in Niassa, Mozambique in 2016, further augments the supply of illicit ivory going into trade (TRAFFIC ivory stockpile database).

Concerning the call in Resolution Conf. 10.10 (Rev. CoP17) for Parties to forensically examine large-scale ivory seizures of 500 kg or more, the fact that only 10% are apparently being tested to determine origin and age is another issue of concern. It is worth considering if a more formal mechanism under the Convention to track compliance with this CITES recommendation is warranted to ensure that vital information is not inadvertently being lost with respect to the largest illegal ivory movements being seized.

The scale of illegal ivory processing operations in Africa for international trade purposes needs to be assessed through further research and investigation, but raw ETIS data suggests that exports of commercial consignments of worked ivory products popular in Asian markets may be increasing. The RIE value for the worked ivory assessed in this analysis represents over 8.7 tonnes of ivory. Further, there are numerous signs that such trade is another facet of transnational criminal syndicate operations in Africa, beyond that being

tracked through large-scale ivory seizure events. A recent TRAFFIC assessment of the ivory trade in Central Africa found:

...expatriate-run carving operations for export have developed in recent years. It was reported that Chinese operatives in Congo, who formerly were just engaged in raw ivory trafficking to Asia, have set up ivory carving operations themselves and regularly export small quantities of worked ivory items as opposed to the export of large consignments of raw ivory as was the case in the recent past. This was being done, it was suggested, to minimize financial losses from seizures of large raw ivory shipments. It was explained that Chinese networks were able to undertake holistic operations that included obtaining ivory from source locations, transporting such ivory to carving sites, running processing operations using Asian carvers and exporting the ivory products to Asian markets. The extent of vertical integration from source to export has considerably reduced the involvement of local carvers and served to displace Africa's native ivory carving industry (Nkoke et al., 2017).

If so, expatriate ivory processing would appear to be taking root in Africa just when ivory manufacturing in China, Hong Kong and Thailand has noticeably contracted or is soon slated for official closure altogether.

Finally, with respect to the notion that ivory processing in Africa for export to Asia is increasing, it is worth noting that many of the countries which these transactions are moving from, through or to are engaged in the NIAP process to combat illegal ivory trade under the Convention, including Angola, Cambodia, Cameroon, China (including Hong Kong SAR), Congo, Democratic Republic of the Congo, Egypt, Ethiopia, Gabon, Kenya, Malaysia, Mozambique, Nigeria, Tanzania, Thailand, Uganda and Viet Nam. For African countries, it is important to assess whether national NIAP strategies have comprehensively identified and combatted illegal ivory processing operations at the national level. For all countries along the trade chain, the degree of awareness concerning commercial-scale movements of worked ivory should be reviewed. In particular, strategies for targeting worked ivory consignments being illegally moved by air as check-in or carry-on baggage or directly on the bodies of couriers need to be improved. This is, especially the case for those countries which function as major air transit hubs between Africa and end-use destinations in Asia. As with the case of narcotics, the use of couriers to move ivory needs to be recognized as a major trade challenge and those arrested in conjunction with such trade should be treated severely under the law. The identities of individuals arrested as couriers should be shared internationally through appropriate law enforcement channels and investigations should entail understanding the frequency with which such individuals have moved in and out of, or between, specific countries. Such trafficking will only be curbed through strong international collaboration between countries and businesses involved in the air transport sector. The global conservation community needs to provide assistance for these efforts. Further, Côte d'Ivoire, South Africa and Zimbabwe currently remain outside of the NIAP process but are heavily implicated in the export of commercial consignments of worked ivory to Asia. It is important that these countries take action to prevent illegal ivory processing and export of worked ivory products in contravention of CITES.

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References

- Falman, R.C. (2015). Elephant Crime Intelligence System Assessment. Environment and Natural Resources Global Practice Discussion Paper #04. The World Bank Group, Washington D.C., USA.
- Martin, E. and Vigne, L. (2011). Illegal Ivory Sales in Egypt, TRAFFIC Bulletin, Vol. 23, No. 3 pp117-122. TRAFFIC International, Cambridge, United Kingdom.
- Milledge, S. and Nuwamanya, E. (2004). Ivory Stock Verification Mission to Burundi: Report to CITES Secretariat, 23rd September 2004. Geneva, Switzerland.
- Milliken, T., Underwood, F.M., Burn, R.W. and Sangalakula, L. (2016a). Addendum to the Elephant Trade Information System (ETIS) and the Illicit Trade in Ivory: A report to the 17th meeting of the Conference of the Parties to CITES. CoP17 Doc. 57.6 (Rev. 1) Addendum, CITES Secretariat, Geneva, Switzerland. 5 pp.
- Milliken, T., Underwood, F.M., Burn, R.W. and Sangalakula, L. (2016b). The Elephant Trade Information System (ETIS) and the Illicit Trade in Ivory: a report to the 17th meeting of the Conference of the Parties. CoP17 Doc. 57.6 (Rev. 1) Annex, CITES Secretariat, Geneva, Switzerland. 30 pp.

Nkoke, S.C., Lagrot, J.F., Ringuet, S., Milliken, T. (2017). Ivory Markets in Central Africa - Surveys in Cameroon, Central African Republic, Congo, the Democratic Republic of the Congo and Gabon: 2007, 2009, 2014/2015. TRAFFIC, Yaounde, Cameroon and Cambridge, United Kingdom.

Underwood, F.M., Burn, R.W., Milliken, T. (2013). Dissecting the Illegal Ivory Trade: An Analysis of Ivory Seizures Data. PLoS ONE 8 (10): e76539.

World Bank (2016). Analysis of International Funding to Tackle Illegal Wildlife Trade. The World Bank Group, Washington D.C., USA.
