CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

Nineteenth meeting of the Conference of the Parties
Panama City (Panama), 14 – 25 November 2022

Species specific matters

Elephants (Elephantidae)

REPORT ON MONITORING THE ILLEGAL KILLING OF ELEPHANTS (MIKE)

1. This document has been prepared by the Secretariat.

Background

2. The Conference of Parties agreed in Resolution Conf. 10.10 (Rev. CoP18) on *Trade in elephant specimens* that the programme known as Monitoring the Illegal Killing of Elephants (MIKE) established under this Resolution and supervised by the Standing Committee, shall continue and be expanded with the following objectives:

   i) measuring and recording levels and trends, and changes in levels and trends, of illegal elephant killing in elephant range States;

   ii) assessing whether and to what extent observed trends are related to measures concerning elephants and trade in elephant specimens taken under the auspices of CITES; changes in the listing of elephant populations in the CITES Appendices; or the conduct of legal international trade in ivory;

   iii) establishing an information base to support the making of decisions on appropriate management, protection and enforcement needs; and

   iv) building capacity in elephant range States and, as applicable, countries involved in trade in elephant specimens, to implement and make use of MIKE in managing elephants and enhancing enforcement.

3. Resolution Conf. 10.10 (Rev. CoP18) further directs the Secretariat to report on information and analysis provided by MIKE at each meeting of the Conference of the Parties. Reports on the MIKE Programme were submitted to the Conference of Parties at its 11th, 12th, 13th, 14th, 15th, 16th, 17th and 18th meetings (CoP11, Gigiri, 2000, in document Doc. 11.31.2; CoP12, Santiago, 2012, in document CoP12 Doc. 34.2; CoP13, Bangkok, 2004, in document CoP13 Doc. 29.3; CoP14, The Hague, 2007, in document CoP14 Doc. 53.3; CoP15, Doha, 2010, in document CoP15 Doc. 44.2 (Rev. 1); CoP16, Bangkok, 2013, in document CoP16 Doc. 53.1 and an Addendum; CoP17, Johannesburg, 2016, in document CoP17 Doc. 57.5 and an Addendum, and CoP18, Geneva, 2019, in document CoP18 Doc. 69.2 and an Addendum).

4. This report presents information relating to objectives i) to iv) of the MIKE mandate, as reflected above in paragraph 2.

5. The work of the MIKE Programme, including the preparation of this report, is based on data collected by elephant range States participating in the MIKE Programme and has been possible due to the financial support of the European Union in Africa and the United States Bureau of International Narcotics and Law Enforcement Affairs (US INL) in Southeast Asia. Japan and GiZ (The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) are providing contributions in support of smaller scale projects.

MIKE objective i): Levels of and trends in illegal killing of elephants

MIKE sites

6. MIKE operates in a large sample of designated sites spread across the range of African elephants, *Loxodonta africana*, and Asian elephants, *Elephas maximus*, in 32 countries in Africa and 13 countries in Asia. There are 69 designated MIKE sites in Africa, which together hold more than 50% of the African elephant population, and 30 sites in Asia that represent approximately 25% of the Asian elephant population.

7. In 2020, the MIKE site network in Asia expanded through the addition of Yok Don National Park in Viet Nam, the expansion of the Chunati MIKE site in Bangladesh to include the larger landscape in which Asian elephants are found. The new extended site in Bangladesh is called the Chattogram MIKE site. In the same year, Zimbabwe included Hwange National Park as a MIKE site, bringing the total number of MIKE sites to 69 for Africa.

8. Three additional sites for Cameroon were nominated in 2018, but the process was not concluded by the range State.

Methods and data

9. MIKE data is collected in designated MIKE sites by law enforcement and ranger patrols in the field and through other means. 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 standardized carcass forms, details of which are then submitted to the MIKE Programme. The participating MIKE sites are encouraged to submit carcass data for a specific year by 31 January of the following year.

10. The MIKE Online database, developed in collaboration with the Science Division of the United Nations Environment Programme (UNEP) and funded by the European Union, contains more than 27,700 elephant carcass records submitted by participating elephant range States from 2003 to 2021 for MIKE sites in Africa and Asia. This includes 23,378 records of elephant carcasses found between 2003 and the end of 2021 at MIKE sites in Africa; and 4,341 records of elephant carcasses found at MIKE sites in Asia during this period.

11. The MIKE Programme evaluates relative poaching levels based on the Proportion of Illegally Killed Elephants (PIKE), which is calculated on an annual basis as the number of illegally killed elephants found, divided by the total number of elephant carcasses encountered by patrols or other means, which includes elephants illegally killed, elephants that died of natural causes, management-related deaths as well as deaths recorded as unknown (cause of death could not be determined).

12. PIKE is an index of poaching pressure and provides trends relating to the levels of poaching. PIKE 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.

13. Since CoP18, the Secretariat, in collaboration with the MIKE-ETIS Technical Advisory Group (TAG) finalized the review of the MIKE analytical methodology. The Secretariat informed Parties of the process to refine and improve the statistical analysis (CoP18; document CoP18 Doc. 69.2). The Secretariat published two reports since CoP18, i.e., *Monitoring the Illegal Killing of Elephants (MIKE) Report: PIKE trend analysis – Methodology and Results,* published on 16 November 2020; and *Monitoring the Illegal Killing of Elephants (MIKE) PIKE trend analysis 2003 – 2020* published on 1 November 2021, to provide Parties with information relating to the outcome of the review and with the PIKE trend analysis based on data submitted by the participating range States. A Bayesian generalized linear mixed model (GLMM) approach is used to calculate the PIKE trend analysis. A GitHub repository contains details of technical materials and R-code used in the analysis.

14. The Secretariat continues to assess the information submitted by range States relating to human-elephant conflict. Based on reporting by range States, deaths associated with human elephant conflict are sometimes categorized as “illegal”, while in other cases these are reported as “management related deaths” or other types of death. For Africa, the Secretariat assessed the 913 records (4% of all carcass records) where Parties reported that elephant deaths were associated with human elephant conflict. The majority of records indicated that the deaths associated with human elephant conflict were management related deaths (58% or 530 records); 39% (357 records) were recorded as “illegal” and the remainder (3% or 23 records) as other types of death. In Asia, 117 records (3%) where Parties reported that elephant

deaths were associated with human elephant conflict were assessed. The majority of records indicated that the deaths associated with human elephant conflict were related to "illegal" deaths (68% or 80 records); 4% (5 records) were categorized as "management related"; 20% as "natural deaths" (23 records) and the remaining 8% (9 records) as other type of death. Because PIKE is used as an index of poaching, it is important to understand to what extent illegal deaths associated with human elephant conflict, which may not be considered poaching, are included. The Secretariat will continue to collaborate with participating range States on the reporting of human-elephant conflict related deaths and the MIKE-ETIS Technical Advisory Group (TAG) to determine how the MIKE analysis should be refined, if required.

PIKE trend analysis: Africa

15. The data set used for the PIKE trend analysis for Africa consists of 23,378 records of elephant carcasses found from 2003 to the end of 2021 at 66 MIKE sites in 30 range States in Africa, representing a total of 805 site years.

16. The PIKE trend analysis presented in this document considers an additional 1,319 records of elephant carcasses encountered in the course of 2021, that were reported by 61 MIKE sites in Africa. The number of reporting MIKE sites slightly decreased from 62 in 2020 to 61 in 2021 (see Figure 1A).

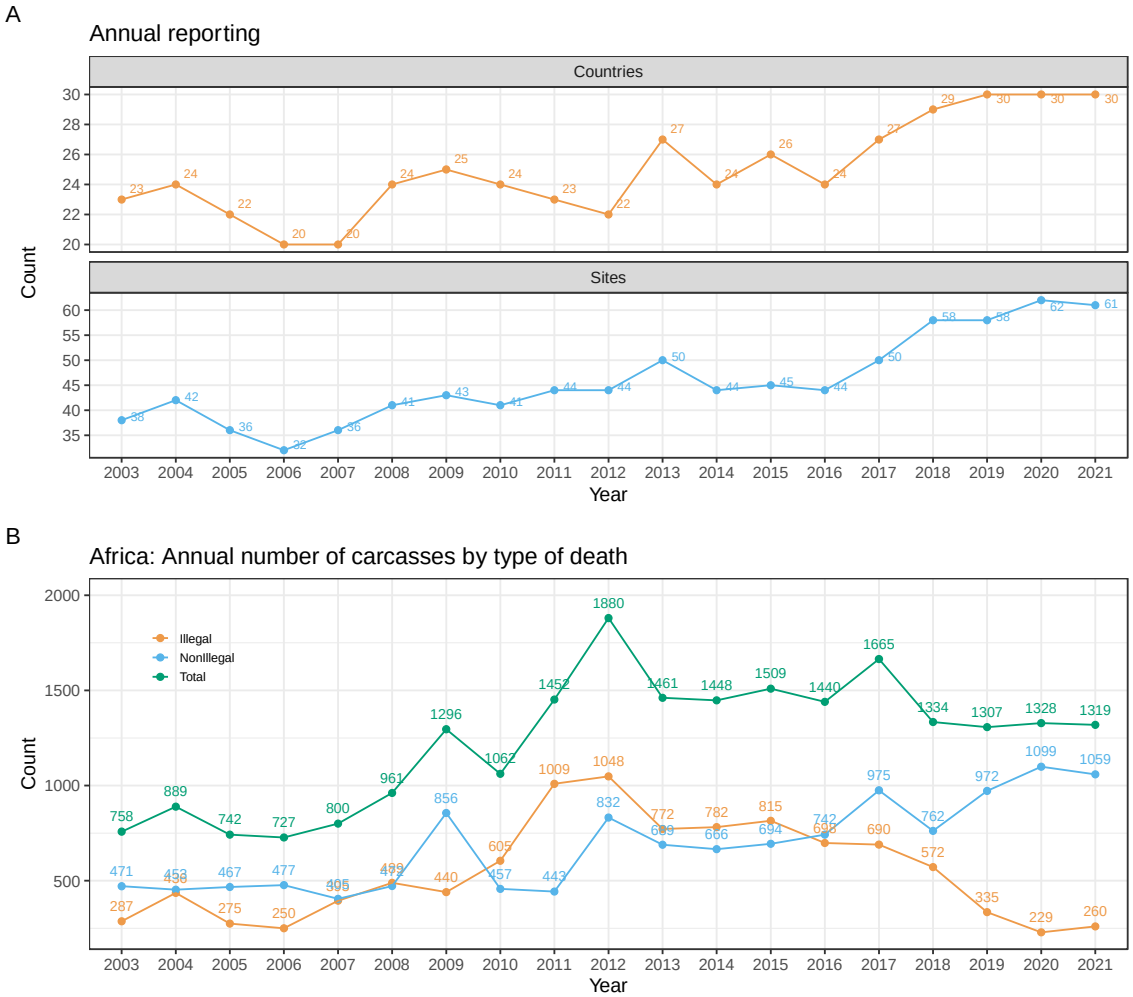

Figure 1: *A. Number of countries and MIKE sites that submitted reports (2003 – 2021). In 2021, the number of sites that reported from central, eastern, southern and west Africa were 12, 15, 17 and 17 respectively. B. The total number of carcasses reported irrespective of cause of death (green), the number of carcasses of elephants illegally killed (orange) and the number not illegally killed (blue) (natural deaths, management related deaths and unknown type of death) reported by year.*

17. In 2021, 12 of the 16 sites in central Africa submitted reports (75%); in eastern Africa, 15 of 16 sites (94%); in southern Africa, 17 of 19 sites (89%); and in west Africa, 17 of 18 sites (94%). Of the sites that submitted reports, two in central Africa, four in eastern Africa, one in southern Africa and ten in west Africa reported zero carcasses found in 2021. Compared to 2020, nine fewer elephant carcass records were submitted in 2021 (see Figure 1B). Two hundred and sixty (260) of the 1,319 carcasses reported in 2021 were recorded as illegally killed; while 229 of the 1,328 carcasses reported in 2020 were recorded as illegally killed.

18. Figure 2 shows the continental PIKE estimate across years based on the unweighted Bayesian GLMM (MM.p.uw) analysis (not weighted by elephant population size). The error bar or confidence/credible interval shows the level of uncertainty in the annual PIKE estimates. In Bayesian analysis, a 95 percent credible interval (CI) is an interval within which PIKE falls with a 95% probability.

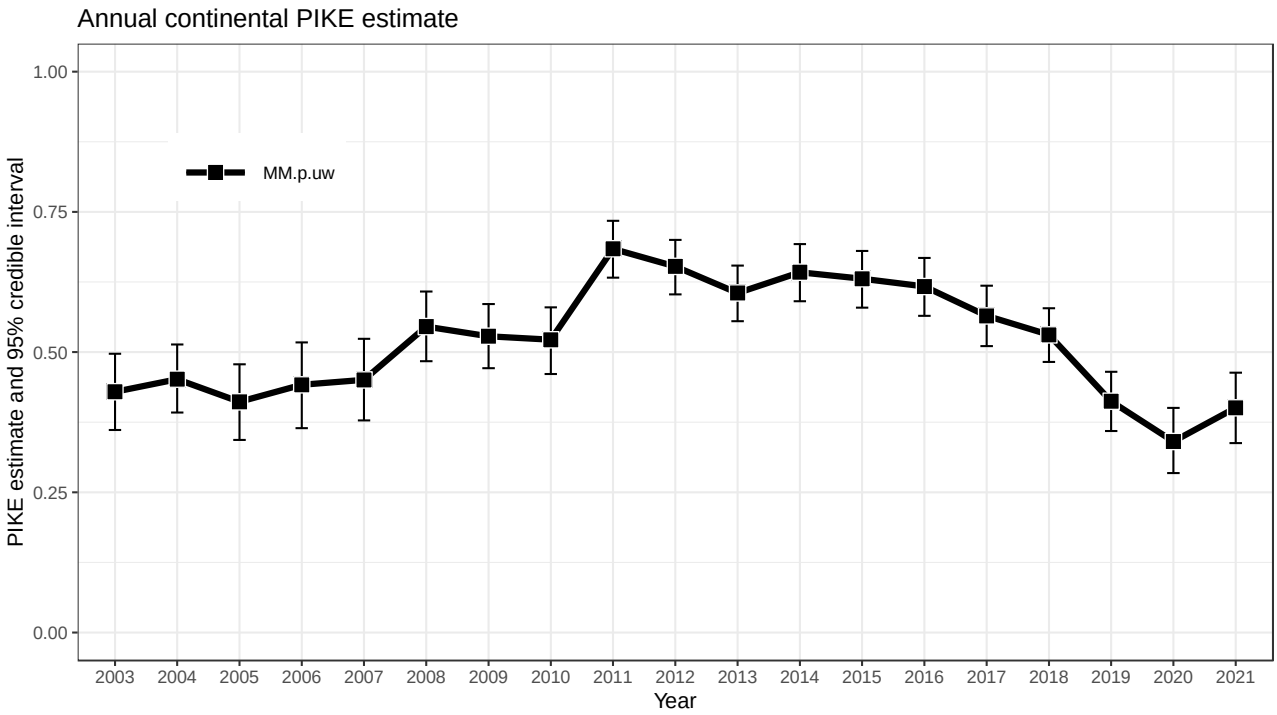

Figure 2: *Continental PIKE estimates based on the unweighted Bayesian GLMM approach (MM.p.uw). The error bar or the confidence / credible interval shows the level of uncertainty in the annual PIKE estimates.*

19. Between 2003 and 2021, the highest PIKE estimate was in 2011 and the lowest in 2020. Prior to the maximum value of PIKE in 2011, a trendline analysis shows sufficient evidence to confirm an upward trend (increase in PIKE) from 2003 to 2011, and a downward trend (decrease in PIKE) from 2011 to 2021 (see Annex 1 for the table with details relating to the statistical support for the two trends). Over the last five years (2017 to 2021), the trend analysis shows a downward trend in PIKE, with a level of certainty of over 95%. The 2021 PIKE estimate (0.4) is higher than the 2020 estimate (0.34), while it is within the confidence limits of the 2020 estimate.

20. Figure 3 (A-D) shows the subregional PIKE estimates based on the unweighted Bayesian GLMM (MM.p.uw) approach for central, eastern, southern and west Africa from 2003-2021. The error bar, also known as the confidence interval or credible interval, depicts the amount of uncertainty in the yearly PIKE estimate. The annual pattern of change in PIKE differs among subregions, as shown in the graph below.

Central Africa

21. The PIKE estimates, based on the unweighted Bayesian GLMM approach, for central Africa is shown in Figure 3-A. As is the case in the continental trend, there is strong evidence that the PIKE trend increased from 2003 to 2011 (Table, Annex 1), followed by a period from 2011 to 2019 during which PIKE fluctuated around a value of 0.75. The trend in the last five years (2017-2021) shows no evidence of a downward trend (Table, Annex 1).

22. For 2021, the PIKE estimate for central Africa remains high, with an average PIKE estimate of 0.59 (range: 0.44 - 0.73) and above the average continental PIKE estimate of 0.40 (range: 0.34 - 0.46) for the same year. While the 2021 PIKE estimate for the sub-region is higher than the 2020 estimate (0.44), it is within the confidence limits of the 2020 estimate. Furthermore, some sites reported data for 2021 but did not report in previous years and the contribution of a single site with a substantial number of carcasses reported in any year can cause variability in the PIKE estimate in the sub-region with low reporting rates in terms of number of sites or total number of carcasses.

Eastern Africa

23. The PIKE estimates for eastern Africa are shown in Figure 3-B. Between 2003 and 2021, the highest PIKE estimate for the subregion was in 2011. Based on the unweighted Bayesian GLMM analysis, there is strong evidence for an upward trend from 2003 to 2011 followed by a downward trend from 2011 to 2021. The trend in the last five years, from 2017 to 2021, is downward. For 2021, the unweighted PIKE estimate in eastern Africa is 0.28 (range: 0.20 - 0.37) and below the average continental PIKE estimate of 0.40 (range: 0.34 - 0.46) for the same year.

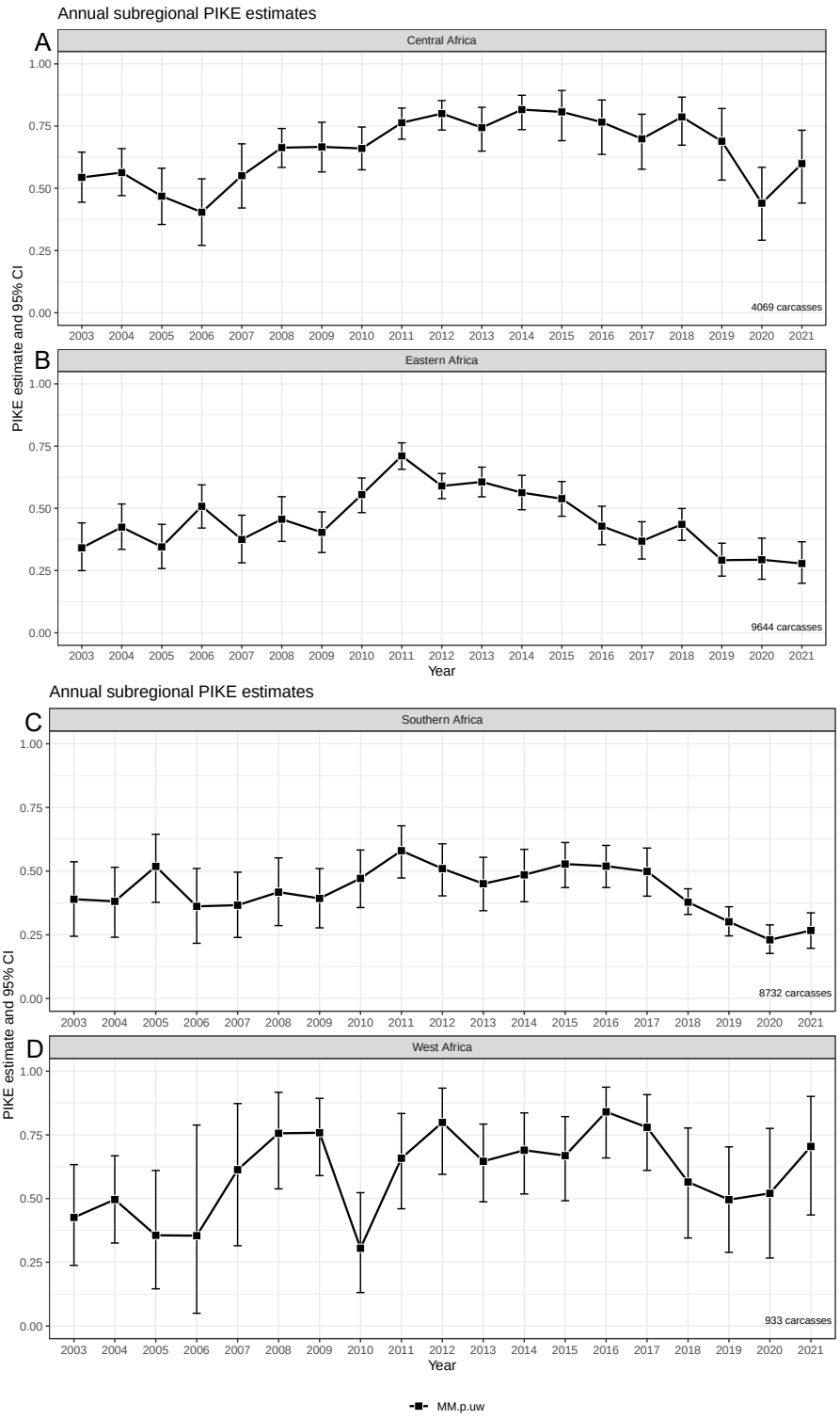

Figure 3: *Subregional PIKE estimates across years based on unweighted Bayesian GLMM approach. The error bar shows the level of uncertainty in the annual PIKE estimates and represent 95% credible intervals. The total number of carcasses (2003-2021) for each subregion is shown in the bottom right corner of each graph. A – central Africa; B – eastern Africa; C – southern Africa and D – west Africa.*

Southern Africa

24. The PIKE estimates for southern Africa are shown in Figure 3-C. Between 2003 and 2021, the highest PIKE estimate for the subregion was in 2011. Based on the unweighted Bayesian GLMM analysis, PIKE likely increased between 2003 and 2011 and subsequently decreased from 2011 to 2021.

25. In the last five years, from 2017 to 2021, there is strong evidence of a downward trend. The unweighted PIKE estimate for 2021 in southern Africa is 0.27 (range: 0.20 - 0.34) and below the average continental PIKE estimate of 0.40 (range: 0.34 - 0.46) for the same year.

West Africa

26. The PIKE estimates for west Africa are shown in Figure 3-D. Compared to the three other subregions, west Africa reported the lowest total number of carcasses: 933 carcasses reported over 19 years (Figure 3. D). Small populations of African elephants are known to exist in the subregion and due to the low sample size, it is particularly difficult to make reliable inferences based on the year-to-year trend. In the previous reports to the Conference of Parties, concerns were raised about the low number of MIKE sites in the sub-region that report on an annual basis. Reporting by the MIKE sites in the sub-region has improved since 2019, but it should be noted that as indicated in paragraph 17, ten of the sites reported that zero carcasses were detected and provided information relating to patrols carried out at the sites.

27. Based on the small number of carcasses reported, inferring a subregional pattern is challenging. Statistically, a small sample size results in a high level of uncertainty of the PIKE estimates (i.e., the width of the credible intervals gets wider). A marginal downward trend from 2017 to 2020 is observed, but PIKE increased from 0.52 in 2020 to 0.70 in 2021. For 2021, the unweighted PIKE estimate in west Africa is 0.70 (range: 0.44 - 0.90) and well above the average continental PIKE estimate of 0.40 (range: 0.34 - 0.46) for the same year.

PIKE trend analysis: Asia

28. The data set used for this analysis consists of 4,341 records of elephant carcasses found between 2003 and the end of 2021 at 30 MIKE sites in 13 range States in Asia, representing a total of 287 site-years. Approximately 94% (=4081/4341) of the carcasses are from MIKE sites in south Asia and the remaining 6% (=260/4314) from MIKE sites in southeast Asia. It should be noted that more than 70% of Asian elephants occur in south Asia. In 2021, 13 sites reported from south Asia and nine sites from southeast Asia. Seven sites reported that zero carcasses were detected in 2021 (three sites in south Asia and four sites in southeast Asia).

29. The PIKE trend analysis presented in this document considers an additional 174 records of elephant carcasses encountered in the course of 2021, that were reported by 22 MIKE sites in Asia. The number of reporting MIKE sites slightly decreased from 26 in 2020 to 22 in 2021 (Figure 4-A). The total number of carcasses reported decreased between 2020 and 2021, with 280 reported in 2020 and 174 in 2021. The number of carcasses reported as illegally killed decreased from 52 in 2020 to 21 in 2021. In Asia, illegal killing of elephants is generally associated with human-elephant conflict and in some cases, illegal killing for elephant specimens (ivory and skin) (Gosling J. 2018, Sampson et al. 2018). The detailed MIKE data does not reflect this information and the MIKE Programme continues to work with range States to ensure reporting includes details relating to the role of conflict in elephant deaths.

30. Figure 5 shows the continental PIKE estimate across years based the unweighted Bayesian GLMM (MM.p.uw) analysis. The error bar or confidence/credible interval shows the level of uncertainty in the annual PIKE estimates. In Bayesian analysis, a 95 percent credible interval (CI) is an interval within which PIKE falls with a 95% probability. The PIKE trend in the last five years (2017-2021) has remained relatively flat with an average value of 0.35. For 2021, the unweighted PIKE estimate is 0.33 (range: 0.23 - 0.45).

31. Trend analysis disaggregated by subregion is not reported because a large proportion of carcasses are reported from south Asia as stated above. In addition, approximately 92% of the records (3,971 carcass records) are from MIKE sites in India, which holds the largest population of Asian elephants.

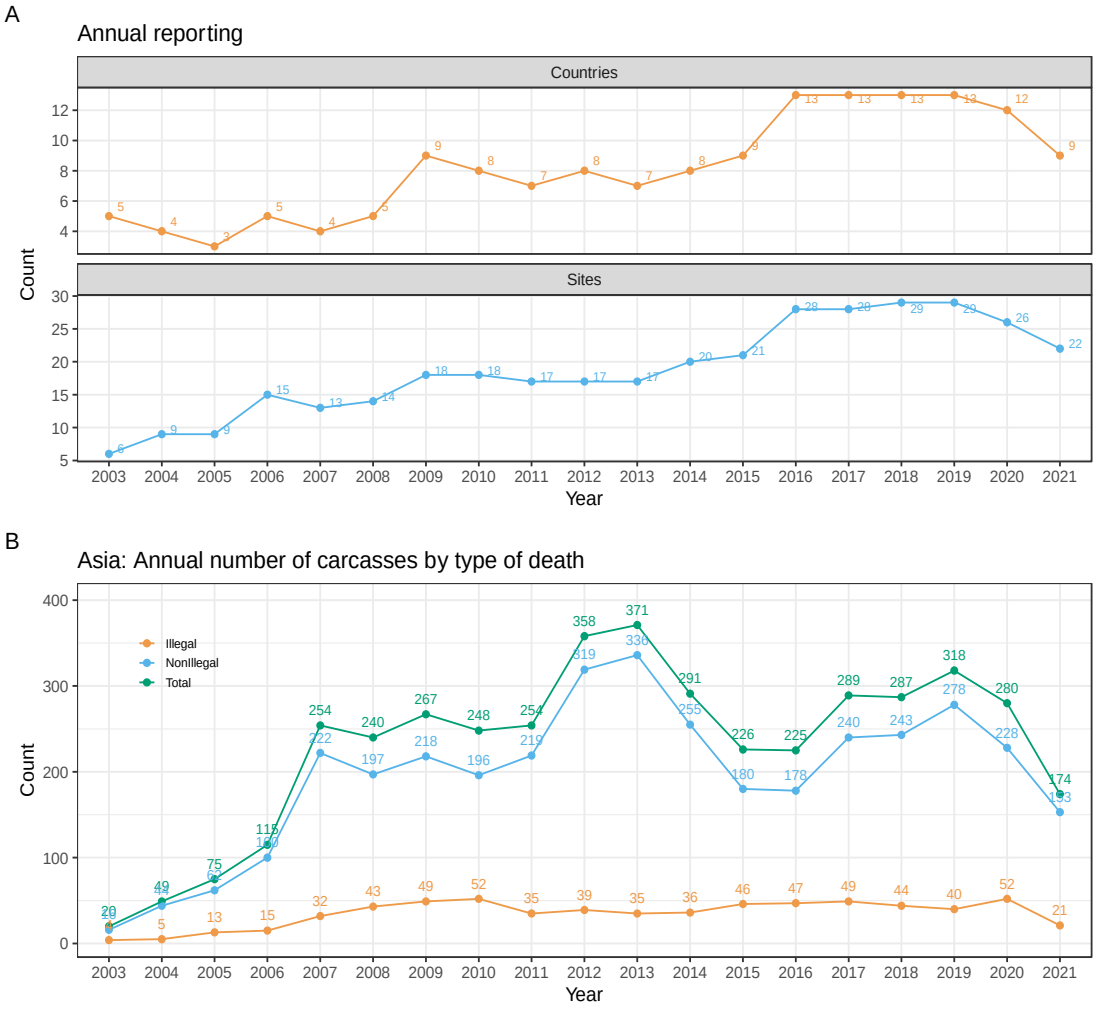

Figure 4: *(A) Total number of countries and sites that submitted reports by year. (B) The total number of carcasses reported irrespective of cause of death (green), the number of carcasses of elephants illegally killed (orange) and the number not illegally killed (blue) (natural deaths, management related deaths, unknown type of death) reported by year.*

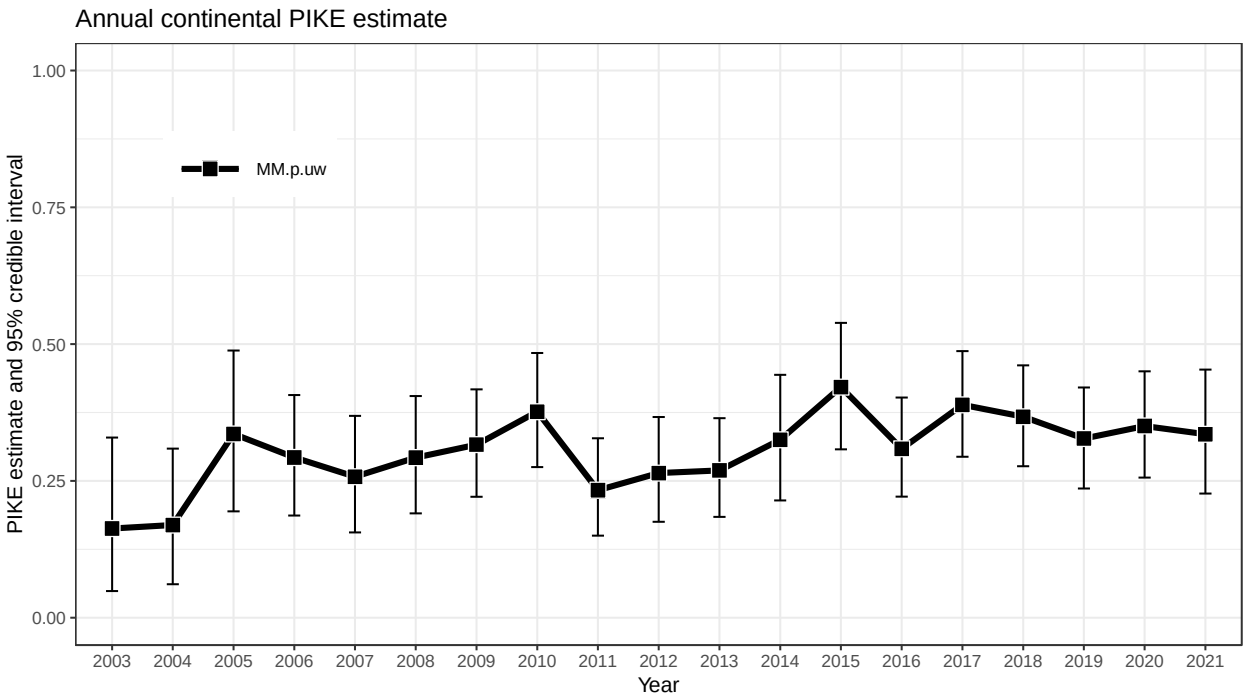

Figure 5: *Continental PIKE estimates for Asia, based on the unweighted Bayesian GLMM approach (MM.p.uw). The error bar or the confidence / credible interval shows the level of uncertainty in the annual PIKE estimates.*

MIKE objective ii): Assessment of effects of CITES decisions and other factors associated with trends in illegal killing of elephants

32. Previous reports to the Conference of Parties and the Standing Committee reflected on the potential impact of CITES decisions relating to the international sale of government-owned raw ivory stocks from four populations of *Loxodonta africana* included in Appendix II (Botswana, Namibia, South Africa and Zimbabwe) to approved trading partners (China and Japan) on the levels of illegal killing of elephants (documents CoP16 Doc. 53.1; SC65 Doc. 42.1). These reports indicated that no evidence was found to suggest that illegal killing of elephants increased or decreased as a result of the one-off ivory sales or the nine-year moratorium. The illegal ivory trade is a complex dynamic system involving many different countries and players with different drivers acting at different places and on different temporal and spatial scales along the trade chain. It is therefore difficult to determine causation of specific events and decisions. To understand whether a particular event has affected the illegal killing of elephants and the illegal ivory trade, its role would need to be assessed in relation to all other potential drivers of the trade. Any analysis should therefore look at the relative contribution of different drivers, rather than attempting to attribute any changes to a single cause. However, it is extremely challenging, and perhaps impossible, to disentangle these effects in the context of broader trends that lie beyond the control of CITES.

33. Annex 2 of Resolution Conf. 10.10 (Rev. CoP18) sets out the scope of the MIKE Programme. It includes the examination of factors associated (correlated) with the illegal killing of elephants. In 2021-2022, the Secretariat, in collaboration with the University of Oxford and under the guidance of the MIKE-ETIS TAG, carried out an analysis of factors associated with levels and trends in PIKE using data from 64 African MIKE sites. The project involved (1) reviewing literature evidence to generate hypotheses about factors that may drive, facilitate, or motivate poaching, (2) identifying datasets representing these factors, and (3) testing for empirical associations between illegal killing and factors with strong hypotheses and data of sufficient quality. This analysis involved several new covariates not tested in previous analyses (such as comparable data on household wealth and health, armed conflict intensity, and raw elephant ivory prices). The full list of factors (covariates) is contained in Annex 2.

34. Data from various publicly available databases (Annex 2) and MIKE monitoring data relating to 22,455 elephant carcasses (of which 10,286 were illegally killed) that span 19 years (2002-2020) from 64 MIKE sites in 30 African countries were used. A Bayesian hierarchical regression model was used, similar to that used in the previous PIKE-covariate analysis (Hauenstein *et al*., 2019), with the important addition of a new site-year random effect (which ensured more robust and conservative predictions).

35. The fitted regression model describes the association between PIKE and the model's factors (covariates) (see Annex 2 for the results for all the factors). Figure 6 shows the relationships between the proportion of illegally killed elephants (PIKE) and covariates with strong evidence for a positive/negative effect: A) household wealth (derived from comprehensive household surveys); B) household health (life expectancy index); C) law enforcement capacity (based on MIKE assessments), D) national governance quality (World Governance Indicators) and E) the annual global trend in ivory price (based on 3012 raw elephant ivory price samples).

36. Based on Figure 6 and the model results contained in Annex 2, the main findings are summarized as follows:

    a) There was strong evidence that the illegal killing of elephants tends to be lower in countries with better governance quality; at sites with higher law enforcement capacity; and at sites where adjacent households are wealthier and healthier. Strong evidence is where the 90% Bayesian credibility interval for the covariate effect does not include zero.

    b) A strong positive association was found between the illegal killing of elephants and the global annual trend in the price of elephant ivory. While this supports the working hypothesis that demand driven increase in ivory price may incentivise poaching, there are multiple alternative explanations for a positive relationship between ivory price and the illegal killing of elephants.

    c) There was a weak positive association between PIKE and armed conflict intensity. In other words, there is some tendency that illegal killing tends to increase with conflict intensity. However, this effect weakened further when conflict intensity was measured over longer time scales (3-5 years) and so it was conservatively concluded that there was no strong evidence for an effect of conflict on illegal killing.

    d) There was no association found between PIKE and precipitation anomaly, vegetation density, elephant population size and density, travel time from the site to the nearest city, or the size of the site (km^2).

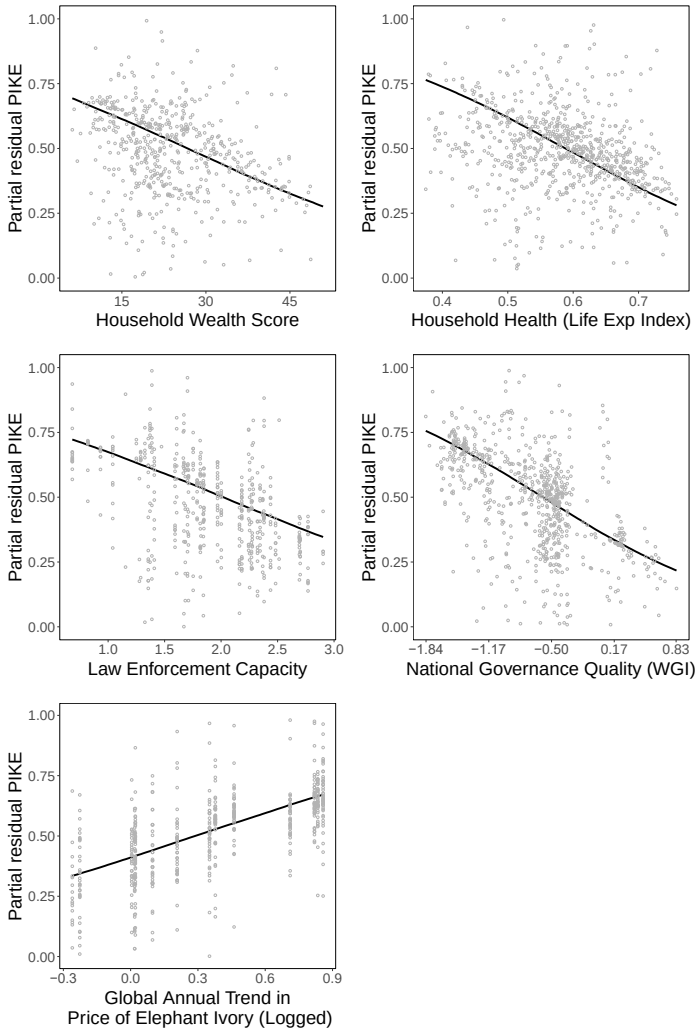

Figure 6: *The estimated effect of well-supported covariates (90% credible interval for their effect excludes zero) on the proportion of illegally killed elephants (PIKE). Bands represent 90% credible intervals from 5000 MCMC samples, and grey points represent response-scale partial residuals. Colours distinguish positive versus negative relationships.*

MIKE objectives iii): Establishing an information base to support decisions on management, enforcement and protection needs; and iv): Building capacity in elephant range States to implement and make use of MIKE in managing elephants and enhancing enforcement.

37. In accordance with its mandate under Resolution Conf. 10.10 (Rev. CoP18), the CITES MIKE Programme has focused its capacity-building efforts at the site level with the aim of improving the ability of site management to implement MIKE, to make use of MIKE data in managing and conserving elephants, and to enhance wildlife law enforcement to minimize the illegal killing of endangered species, including elephants for illegal trade or otherwise.

Ability of site management to implement MIKE and make use of MIKE data

38. Due to travel constraints associated with the COVID-19 pandemic, in-person training at the MIKE site level has been impossible for much of the period since CoP18. In response, the MIKE Central Coordination Unit had 31 online meetings with the MIKE focal points in the participating range States. Issues related to the implementation of MIKE, including patrol strategies, systems for data collection and management, the technical capacity to collect data, reporting mechanisms, data quality, training, and equipment needs were discussed. These meetings also provided an opportunity to discuss concerns raised by the MIKE-ETIS TAG members, including issues related to the recording of elephant deaths as unknown, the importance of identifying human-wildlife conflict-related elephant deaths (especially those considered illegal), clarification of the concept of management-related deaths, and data collection in the buffer zones around MIKE sites.

39. MIKE training initiatives were also organized online due to travel restrictions associated with COVID-19. Since 2019, 14 online sessions, targeting 11 African elephant Range States and 23 sites, have taken place. These online training sessions have targeted national focal points, site focal points, site partners and senior

rangers and focused on MIKE elephant mortality and patrol effort data collection, as well as reporting and the use of the MIKE online database. The MIKE online database contains all the data submitted by participating MIKE sites in Africa and Asia since 2003 and MIKE focal points can access and use the data, either in its raw form or in the form of a site report (annual / monthly report) to inform elephant management at the site level. The data visualisation features allow range States to map the carcass locations and produce graphs on the frequency of carcass related attributes (i.e., carcass decay stage, age and sex of the elephant that died, as well as the type and cause of death). Training on stockpile management, with a focus on ivory, was also provided to MIKE focal points in eastern and west Africa and will be conducted in 2022 for range States in southern and central Africa.

40. In total, 158 staff, including MIKE national and site focal points and patrol team leaders took part in these online trainings on MIKE data collection. An advantage of training MIKE focal points at the national and site level is that on-site training can then be conducted by the supervisors of the rangers on a regular basis. This should help ensure the sustainability of the training of rangers on MIKE elephant mortality and patrol effort data collection. The training of the MIKE focal points should also improve their ability to verify the reliability of the data collected by the rangers in the field.

41. Other mechanisms were also used to provide training for rangers, both in-person and online. Collaboration with other organizations that are conducting training activities at some MIKE sites has also been pursued as a complementary action to enhance the reach of training on MIKE requirements. These organizations already support law enforcement and biomonitoring activities at specific sites and will provide ongoing training and monitoring of data collection. To date, three collaboration agreements have been signed and one small scale project developed to support MIKE activities in six MIKE sites.

    a) **Nigeria – Yankari National Park:** A Small-Scale Funding Agreement was signed between the CITES Secretariat and Wildlife Conservation Society (WCS) Nigeria. The project focuses on MIKE training, and specific law enforcement training, including Spatial Monitoring and Reporting Tool (SMART) and related subjects. The project will also support regular visits by the national focal point to the site. Basic equipment will be provided to support MIKE monitoring at the site.

    b) **United Republic of Tanzania – Ruaha-Rungwa and Katavi-Rukwa MIKE sites:** A Small-Scale Funding Agreement was signed between the CITES Secretariat and WCS Tanzania to support training in these sites. The collaboration is focused on conducting MIKE training in the two MIKE sites and purchasing basic equipment for MIKE monitoring.

    c) **Guinea – Ziama Classified Forest and Liberia – Sapo National Park:** A Small-Scale Funding Agreement was signed between the CITES Secretariat and Fauna & Flora International to support training in these two areas. The project aims to support MIKE training and other specialized law enforcement capacity-building activities (including social safeguards training), and the provision of basic equipment for MIKE monitoring at MIKE sites in Liberia and Guinea.

    d) **Democratic Republic of the Congo – Salonga National Park:** A small scale project has been prepared in collaboration with WWF to support MIKE training and other specialized training (including social safeguards training) as well as provision of basic equipment for MIKE monitoring.

42. In addition to the sites supported by partners, 40 MIKE sites in Africa will receive basic equipment for MIKE data collection and management. It is anticipated that the provision of basic equipment will improve elephant mortality data collection in the field and the management of this data.

43. A CITES MIKE e-learning platform was developed to address the concern of in-person training during the COVID-19 pandemic, but also to provide ongoing training for sites that have access to the Internet, in the long term. This programme includes courses on elephant mortality and patrol data collection; law enforcement best practice courses; and user guides for the MIKE online database and the Law Enforcement Planning Toolkit. These courses are designed for MIKE site managers, national wildlife agency staff, and staff from other organizations involved in supporting MIKE site management. The course includes video on the topics covered, case studies, quizzes, and assignments. At the time of preparing this document, 86 users have registered on the platform, with 31 users registered for the course on MIKE site monitoring and data collection.

44. In Asia, restrictions related to the COVID-19 pandemic have not allowed for sites visits since 2019. However, training has been provided through online sessions and collaboration with technical partners who conduct

activities in some sites. Training material on elephant mortality data collection was developed with Asian elephant specificities and will be distributed to all participating range States.

45. To address the travel restrictions associated with the COVID-19 pandemic, partnerships have been established with organizations working at some of the MIKE sites in southeast Asia to support them with training on elephant mortality data collection, SMART training, and the provision of basic equipment. A site support package has been developed for Nam Phui National Protected Area in the Lao People's Democratic Republic (PDR) and has been formally approved by the relevant authority in Lao PDR. Support packages for Salak Pra Wildlife Sanctuary (Thailand), Taman Negara National Park, and Endau-Rompin National Park (Malaysia) are in discussion with government counterparts and on-site partners.

Enhancing wildlife law enforcement

46. The final evaluation of the MIKE Phase II project, which ran from 2006 to 2012 with funding from the European Union, recognized that, with the resources available to MIKE, it was not possible to build capacity substantially and sustainably across all MIKE sites in Africa. The evaluation recommended that, in addition to ongoing activities, MIKE provide specific and more substantial support focused on enhancing enforcement in a smaller number of sites. As a result of this recommendation, under the MIKES project (2014 - 2019), funds were allocated for the first time to build law-enforcement capacity in MIKE 'focal sites'. This work has been continued and expanded under the subsequent Cross Regional Wildlife Conservation Project (CRWCP) (2019 - 2023) and MIKES+ Project (2019 - 2024) also funded by the European Union.

47. The MIKE focal sites were selected in accordance with their importance for the protection of key populations of elephants and other CITES-listed species, the scale and nature of the threats to these species, and the likelihood of mitigating these threats through targeted support for the protected area's law enforcement and management systems. Focal sites were selected under the Cross Regional Wildlife Conservation were selected according to these criteria, and whether the area is transboundary in nature. Taken together there are eighteen MIKE sites supported as focal sites – eleven MIKE sites under the Cross Regional Wildlife Conservation Project (CRWCP), and seven supported under the MIKES+ Project:

MIKE focal sites supported under the EU funded Cross Regional Wildlife Conservation Project (CRWCP):	*MIKE focal sites supported under the EU funded Intra-ACP Wildlife Trafficking (MIKES+) project:*
i) Kafta Sheraro National Park, Ethiopia	i) Dzanga Sangha Protected Area, Central African Republic
ii) Kwando Wildlife Dispersal Area [Luenge-Luiana National Park, Angola; Bwabwata and Mudumu National Parks (and community conservancies), Namibia; Sioma Ngwezi National Park, Zambia]	ii) Gourma MIKE site, Mali
iii) Lower Zambezi National Park, Zambia	iii) Minkebe National Park, Gabon
iv) Mana Pools/Sapi Conservation Area and Chewore Safari Area, Zimbabwe	iv) Mole National Park, Ghana
v) Niassa Special Reserve, Mozambique	v) Nouabale-Ndoki National Park, Congo
vi) Selous Game Reserve, United Republic of Tanzania	vi) Okapi Wildlife Reserve, Democratic Republic of the Congo
vii) Tsavo West National Park, Kenya	vii) Tai National Park, Côte d'Ivoire
viii) Queen Elizabeth National Park, Uganda	

48. A summary of the focus and the implementation status of each MIKE focal site is provided in Annex 3 to this document.

49. Alongside the focal site capacity-building support, Japan also supported several initiatives to improve operations in and around sites in the MIKE network. In 2020, this included the construction of a law enforcement operations base and a strong room to support better management and security of seizures and confiscated items in Niassa Special Reserve, Mozambique. With financing from the EU, this room has been operationalized and equipped so that it now coordinates all operations implemented by reserve management and allows area managers to monitor activities in real time. In 2021, support from Japan focused on the

development of an outpost and control gate in Lower Zambezi National Park, Zambia, which is now in the final stages of completion. In 2021, support was provided to the Rwanda Development Board to improve elephant monitoring and community involvement in anti-poaching operations in Volcanoes National Park, Rwanda. Finally, in 2022, work in Botswana is being supported to secure and register government-held ivory stockpiles and to collect ivory from carcasses of elephants that, according to the Botswana Department of Wildlife and National Parks, died due to toxic levels of cyanobacteria in water bodies in the north of the country.

50. In document CoP18 Doc. 69.2, the Secretariat provided the Conference of Parties with information relating to the aggregated results from the Law Enforcement Capacity Assessments (LECAs) done in 51 MIKE sites. LECAs assess the effort and resources deployed by participating range States in the detection and prevention of illegal killing of elephants and in informing site-level management and activities. Twenty-five MIKE sites in Africa completed the LECA updated since CoP18. Based on the results of these assessments some inferences can be made about the protected area law enforcement management capacity across the MIKE site network in Africa. The majority of sites report that law enforcement patrols, management and stakeholder participation are adequate (average), while intelligence and investigations remain a challenge in some sites. The MIKE Programme continues to support activities, mainly in focal sites, to enhance capacity at the site level to address the gaps identified based on LECAs.

Summary and conclusions

51. PIKE is an index of poaching pressure and provides trends relating to the levels of poaching. Poaching and vital population demographic rates have a combined influence on growth of elephant populations and PIKE on its own is not a predictor of elephant population trends. Information relating to population estimates in addition to PIKE trends should be used to inform the status of elephant populations.

52. The PIKE trend in Africa increased from 2003 to 2011 (maximum value of PIKE), followed by a downward trend (decrease in PIKE) from 2011 to 2021. Over the last five years (2017 to 2021), the trend analysis shows a downward trend in PIKE, with a level of certainty of over 95%. The 2021 PIKE estimate (0.4) is greater than the 2020 estimate (0.34), which was the lowest value since 2003. Continued data collection and future analysis will be necessary to determine whether this trend will continue.

53. The PIKE trend in Asia remains relatively flat and in the last five years (2017-2021) the average PIKE value was 0.35. The submission of MIKE data by Asian elephant range States have improved over the last few years and the MIKE Programme continues to collaborate with range States to further enhance reporting, especially in terms of detailed reporting relating to the cause of death.

54. With regards to factors associated with illegal killing of elephants in Africa, there is strong evidence that the illegal killing of elephants tends to be lower in countries with better governance; at sites with better law enforcement capacity; and at sites where adjacent households are wealthier and healthier. The Africa-wide annual PIKE values were strongly associated with the estimated annual trend in the global price of elephant ivory. The findings suggest that addressing system-level challenges (corruption, human development in rural areas, and supply to the illegal market and consumer demand) are essential in tackling elephant poaching and the broader illegal wildlife trade.

55. The Secretariat continues to build capacity in participating elephant range States, but the level of support is still solely dependent on external funding from donors. Further details related to the operational and financial sustainability of the MIKE programme are contained in document CoP19 Doc 22.

Support to the MIKE Programme

56. The Secretariat is grateful to the European Union for its multi-year support to the MIKE Programme in Africa since the programme's inception. The Secretariat is also grateful for the contribution by US INL, Japan and GiZ.

57. The tentative budget required to implement and further strengthen the MIKE Programme is contained in document CoP19 Doc. 22 and included in Annex 4 to this document.

58. The Secretariat would particularly like to express its gratitude to the African and Asian elephant range States for their cooperation in the implementation of MIKE, and specifically to all the rangers, MIKE site and national officers from participating sites and range States, non-governmental organizations and local partners whose dedication make the MIKE Programme possible

Recommendations

59. The Conference of Parties is invited to take note of this report.

References

Hauenstein, S., Kshatriya, M., Blanc, J. et al. African elephant poaching rates correlate with local poverty, national corruption and global ivory price. Nat Commun 10, 2242 (2019). https://doi.org/10.1038/s41467-019-09993-2.

Gosling, J. (2018). Skinned The growing appetite for Asian elephants. *Elephant Family*. https://www.elephant-family.org/wp-content/uploads/2019/01/Elephant-Family-Skin-Report-2018.pdf

Sampson C, McEvoy J, Oo ZM, Chit AM, Chan AN, Tonkyn D, et al. (2018) New elephant crisis in Asia—Early warning signs from Myanmar. PLoS ONE 13(3): e0194113. https://doi.org/10.1371/journal.pone.0194113

ESTIMATED TRENDS IN PIKE
FROM UNWEIGHTED BAYESIAN GLMM BY REGION AND TIME PERIOD
AND STATISTICAL SUPPORT FOR A DOWNWARD TREND

Region	Time period, Years	Estimated slope (annual estimate of PIKE change) (year-1)	95% Credible interval	Probability that trend is negative	Level of certainty associated with the reported trend (i.e. slope)
Africa	2003-2011	0.026	[0.019, 0.034]	0	highly certain upward
	2011-2021	-0.032	[-0.037, -0.027]	1	highly certain downward
	2017-2021	-0.052	[-0.07, -0.034]	1	highly certain downward
Central Africa	2003-2011	0.030	[0.019, 0.043]	0	highly certain upward
	2011-2021	-0.024	[-0.035, -0.013]	1	highly certain downward
	2017-2021	-0.055	[-0.093, -0.015]	0.997	likely downwards
Eastern Africa	2003-2011	0.032	[0.023, 0.042]	0	highly certain upward
	2011-2021	-0.043	[-0.049, -0.036]	1	highly certain downward
	2017-2021	-0.032	[-0.056, -0.009]	0.996	likely downwards
Southern Africa	2003-2011	0.014	[-0.002, 0.029]	0.039	uncertain of a trend
	2011-2021	-0.031	[-0.04, -0.022]	1	highly certain downward
	2017-2021	-0.061	[-0.086, -0.036]	1	highly certain downward
Western Africa	2003-2011	0.026	[0.000, 0.051]	0.021	uncertain of a trend
	2011-2021	-0.013	[-0.034, 0.006]	0.906	uncertain of a trend
	2017-2021	-0.02	[-0.087, 0.044]	0.709	uncertain of a trend

The probability that the trendline is downwards, is based on a linear regression model of the posterior PIKE estimate. The slope coefficient gives the annual average rate of change of PIKE. A negative slope coefficient indicates a downward tendency, whereas a positive number indicates an upward trend. The credible interval specifies the range of values that the slope can take with 95% certainty. When the probability value is 1 (or 0 if the slope is positive), the likelihood of a downward trend is highly likely, a value less than 1 is likely, and a value less than 0.95 is uncertain.

FACTORS (COVARIATES) AT THE SITE, NATIONAL AND CONTINENTAL LEVEL USED IN THE ANALYSIS TO DETERMINE WHETHER THESE ARE ASSOCIATED WITH TRENDS IN PIKE AND THE MODEL RESULTS

1. The list of factors (covariates) at the site, national and continental level used in the analysis to determine whether these are associated with trends in PIKE:

Factor (plus proxy data and link)	**Hypothesis for how factor might influence poaching (PIKE)**	**Scale**
Drivers: factors hypothesised to drive poaching		
Ivory demand (Annual trend in global elephant ivory price)	Ivory demand may incentivise poaching. If demand increases (e.g., due to increased disposable income) and supply cannot meet demand, ivory price may increase and further incentivise poaching.	Global-by-year
Facilitators: factors hypothesised to facilitate poaching and ivory trafficking		
Governance quality (World Governance Indicators)	Corruption may facilitate poaching at the site level, and the trafficking of ivory within and out of source countries as officials (park managers and border staff) accept bribes or turn a blind eye.	Country-by-year
Accessibility (Travel time from site to the nearest city)	Sites that are easier for syndicates and poachers to access, and from which ivory can be easily and quickly transported, may experience higher levels of poaching.	Site
Accessibility (Size/area of site)	Smaller sites have a higher edge/area ratio making it easier for poachers to access and leave quickly, while larger sites may be difficult to police	Site
Armed conflict (Total battle deaths per sit-year derived from the Uppsala Conflict Geo Dataset)	Armed conflicts lead to institutional and socioeconomic changes that may facilitate poaching, or ivory may be used to fund the operations of warring militias.	Site-by-year
Elephant populations (Size and density)	Sites with larger or more dense elephant populations may be more attractive targets to poachers and syndicates due to higher encounter rates.	Site-by-year
Motivators: factors hypothesised to increase or decrease the motivation to poach		
Household wealth (Sub-national Household Wealth)	The socioeconomic conditions of poverty may compel individuals to engage with poaching to earn income to meet basic needs, in the absence of viable alternatives.	Site-by-year
Human development (Sub-national Human Development Index – income/health/education)	Less developed communities (not necessarily in poverty) may be more likely to participate in or facilitate poaching to earn extra income or through turning a blind eye to poachers.	Site-by-year
Law enforcement capacity (MIKE LE Capacity Assessments)	Enhanced law enforcement allows for more committed and effective rangers, more effective poacher apprehension and deterrence, and may thus result in lower poaching.	Site
Others: Factors unrelated to poaching but that may influence the PIKE index		
Precipitation/drought (Rainfall anomaly from CHIRPS data)	PIKE is sensitive to natural mortality rates, so factors explaining natural mortality variation (e.g., rainfall/drought) may explain variation in PIKE both among sites and over time within a site.	Site-by-year
Detectability (Vegetation density from MODIS NDVI)	Densely vegetated sites may have higher PIKE due to low detectability of natural mortalities which do not have poached carcasses detection cues (forest may also help conceal poachers).	Site-by-year

2. The fitted regression model describes the association between PIKE and the model's factors (covariates). The value of the covariate coefficient (represented by a dot/point) and its confidence interval are displayed in the figure below. The width and location of the confidence interval indicate the strength (or lack thereof) of the link between PIKE and the covariate. When the 90 percent credible interval for a covariate coefficient does not contain zero, there is a positive/negative association with PIKE, and when the 90 percent credible interval includes zero, there is no association with PIKE. Points and bars represent mean and 90% credible intervals for covariate coefficients. Blue lines (coefficient values <0) represent covariates with strong evidence for a negative effect (illegal killing tends to decrease as the covariate increases), while orange represents a positive effect, with the condition that 90% credible intervals for covariate coefficients does not include zero. Covariates were standardized so coefficient effect sizes are directly comparable among covariates.

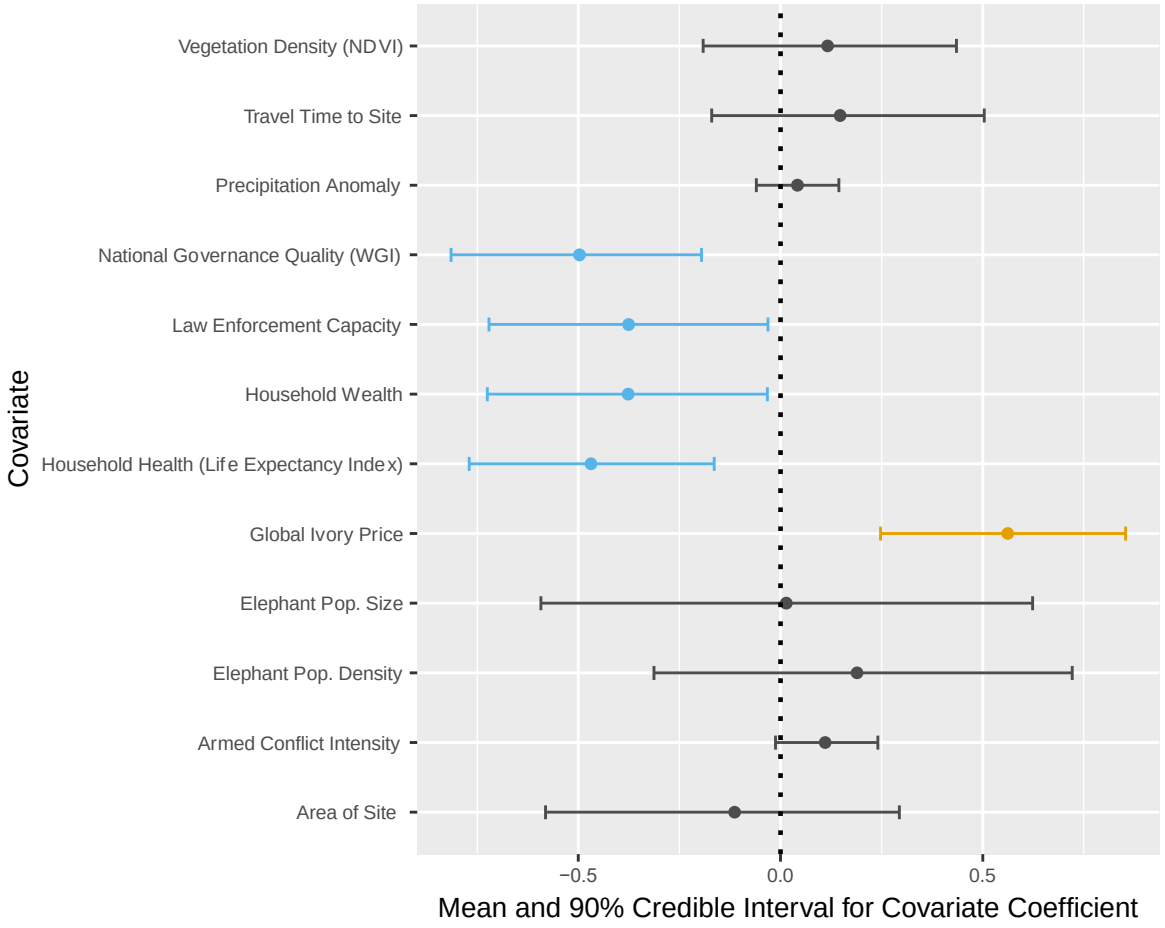

Figure: The effect of various covariates on the illegal killing of elephants (represented by PIKE), based on the LASSO-regulated Bayesian GLMM.

MIKE FOCAL SITE SUPPORT

A summary of the focus and the implementation status of each of the 18 MIKE focal sites supported under two EU funded projects:

i) MIKE focal sites supported under the EU funded Cross Regional Wildlife Conservation Project (CRWCP):

- *Kafta Sheraro National Park, Ethiopia*: Project preparation was finalized in early 2020, shortly before the conflict erupted in the Tigray region, as such implementation has restarted early in 2022. An assessment mission was carried out early in 2022 that provided an update on the impact of the conflict on park natural and management resources. Revised activities have been proposed and are currently being formalized, with the aim of addressing the challenges now facing the area because of the conflict.

- *Kwando Wildlife Dispersal Area [Luenge-Luiana National Park, Angola; Bwabwata and Mudumu National Parks (and community conservancies), Namibia; Sioma Ngwezi National Park, Zambia]*: Project implementation began in August 2020. The project focuses on building capacity within the three protected areas and has a significant focus on supporting transboundary collaboration. Unfortunately, travel restrictions because of the COVID-19 pandemic have prevented transboundary meetings from taking place, but work has begun to help build management capacity in the individual areas through the provision of patrol vehicles; boats to support riverine patrols; patrol staff field equipment; and the construction of protected area management facilities. It is anticipated that transboundary collaboration between the three protected areas activities will begin to be implemented as travel restrictions are relaxed.

- *Lower Zambezi National Park, Zambia*; This site has been supported since early 2020 under the CRWCP project. It was selected as it was shortlisted under the MIKES site selection process and because of its transboundary nature with the Mana Pools, Sapi, and Chewore focal site located across the Zambezi River. The project focuses on improving the coverage of law enforcement operations through the provision of heavy plant equipment to improve the area's roads and patrol vehicles (as well as fuel, maintenance, and spare parts to keep the vehicles operational). Riverine patrols are also being supported through the training and equipping of patrol staff to carry out these operations. Their coordination is being improved through the development of an operations room. Staff numbers and capacity are also being supported through the recruitment of additional staff, which in this case resulted in the creation of Zambia's first all-female patrol team. Refresher training and patrol field equipment are also being provided to all patrol staff and community scouts operating in the area.

- *Mana Pools/Sapi Conservation Area and Chewore Safari Area, Zimbabwe:* Park management infrastructure has been developed throughout the area. This includes the establishment and equipping of two operational control rooms and additional support for a third. Training to support the operationalization of these operations centres is being provided under the CRWCP, including improvements to the area's communication systems. Support has also been delivered to improve the well-being of outposted patrol staff through efforts to improve the provision of clean water to sectoral headquarters, and recreation facilities to staff at outposts in the area. Law enforcement management equipment has been provided and a new ranger base established (including patrol monitoring and communication equipment). Two patrol boats for river patrols have been delivered. Rangers were trained as coxswains and on how to carry out waterborne operations safely. Five patrol vehicles have been provided to support wildlife law enforcement operations throughout the area. Support for ongoing wildlife law enforcement operations continues through the training of patrol staff (both basic, leadership, and other specialized training).

- *Niassa Special Reserve, Mozambique:* This area has been supported since late 2016 first under the MIKES project, and currently under the CRWCP. The sustained support to the area has helped move law enforcement towards a more dynamic and responsive mode of operation rather than one based on long-term deployments to fixed outposts. Support has been provided for the development of an operations room to direct law enforcement operations. Training and equipment were provided to ensure that the room's impact is maximized. Linked to this, support was also provided to enhance communications infrastructure in key parts of the Reserve to support law enforcement operations. More

recently, the project has helped establish and strengthen the Reserve's intelligence through the training of the new unit's staff, provision of equipment, and support for informer handlers. A key feature of the support to this area has been a strong focus on improving the working conditions for field staff through the provision of basic field equipment and results-based incentives for patrol staff.

- *Selous Game Reserve, United Republic of Tanzania*: This site has been supported under the MIKES+ project since the start of 2021. The project was paused initially as the original Selous Game Reserve was divided into a national park and game reserve. Since this process was completed project support has focused on developing the new headquarters for the reserve, and supporting communications and patrol deployment and operations with a focus on one sector of the reserve. Support for the development of the new headquarters includes the construction of an operations room, staff accommodation, and a vehicle maintenance garage. Support for field operations is being achieved through the deployment of vehicles and the provision of field rations. As in many other areas, the development of communications infrastructure between headquarters, outposts, and mobile patrols is also a major part of the planned support package.

- *Tsavo West National Park, Kenya:* This project has been supported under the CRWCP since late 2021. Support for the project is focused on the southern sector of the park. The is focused on improving the effectiveness and coverage of law enforcement patrols; enhancing the strategic and tactical command of law enforcement operations; and improving cross-border collaboration with the authorities in Mkomazi National Park in the United Republic of Tanzania. The project includes support to enhance patrol coverage and operations through the provision of training and vehicles, as well as field equipment for patrol staff. Support is also being provided to operationalize the new southern sector headquarters; improve living conditions and communications at outposts; and improve the provision of freshwater supplies to outposted staff, which is a major issue in the area.

- *Queen Elizabeth National Park, Uganda:* This area has been supported since late 2016 first under the previous EU funded MIKES project, and currently under the EU funded CRWCP. A law enforcement strategy for the park was first developed (with co-funding from GiZ), which has guided the implementation of activities under both phases of support. Field equipment for 60 rangers to support law enforcement patrols has been delivered to the site, as well as digital radio equipment to improve communications between patrols and outposts throughout the site. Work is ongoing and continues to focus on building the capacity of patrol staff through training (including specialist marine training), alongside providing support for key infrastructure in the forms of communications and VHF radios to enhance operations (in collaboration with the Africa Elephant Fund). Additional support is also being used to strengthen key infrastructure with strategically located outposts and the upgrading of parts of the headquarters building. This includes the construction and equipping of a Joint Operations Control Centre and the improvement and development of ranger outposts at key locations throughout the park. Key transportation equipment has also been provided, with three vehicles dedicated to law enforcement patrols in the park.

ii) MIKE focal sites supported under the EU funded Intra-ACP Wildlife Trafficking (MIKES+) project:

- *Dzanga Sangha Protected Area, Central African Republic*: This site has been supported since 2017 under both the previous MIKES and ongoing MIKES+ projects. At the start of the project, all rangers were lacking basic field patrol equipment including communications devices following the 2013-2014 crisis in the country. Patrol supplies systems used onsite were ineffective, leading to poor patrol planning, poor management of patrol teams, and poor ranger welfare. Since project inception, almost 100 patrol staff have been provided with key field equipment. Training of patrol staff has been institutionalized and is now carried out on a regular basis at a new field-based training facility. A patrol rations store has been constructed to provide patrol staff with access to rations at cost and enable better use of allowances provided. Patrol vehicles and boats have been delivered to the site and are supporting operations which are now coordinated out of a dedicated Law Enforcement control room. Activities under the ongoing MIKES+ project are focused on replacing field equipment; better equipping the control room so that it can monitor and direct operations in real time; and supporting continued training and capacity-building of area patrol staff and managers.

- *Gourma MIKE site, Mali*: An agreement was signed in early 2022 under the MIKES+ project to provide support to help protect the population of elephants found in the Gourma region of Mali. The project will support the training of trainers in anti-poaching operations to build in-country capacity to combat illegal activities and provide support for community engagement in elephant conservation activities by supporting community scouts in the area.

- *Minkebe National Park, Gabon*: This site has been supported under the MIKES+ with the agreement signed at the end of 2021. The project has three main focus areas: improving the protection of the area's biodiversity; improving community awareness of and support for the park; and enhancing overall area management capacity. Activities on the ground are just getting underway at the time of writing.

- *Mole National Park, Ghana*: This site has been supported under the MIKES+ project since the middle of 2021. The project has two main objectives: the first focuses on the training and equipping of law enforcement staff. The second focuses on the construction and improvement of facilities at ranger outposts throughout the area. To date, the previously dormant national mobile training unit has been reactivated with support of the project and training has already been provided to 17 law enforcement officers from three protected areas. Rations have been provided to support law enforcement patrols throughout the area. The procurement of vehicles to support law enforcement patrols is underway and the rehabilitation of existing ranger posts in remote parts of Mole has begun.

- *Nouabale-Ndoki National Park, Congo:* This site has been supported under the MIKES+ project since mid-2021. The project has two focus areas: improving the effectiveness and efficiency of patrols and strengthening the area's operational effectiveness. The first of these focuses on the recruitment, training, and operational support (in the form of rations and fuel) of law enforcement patrol staff. The second result area is mainly focused on the improvement of law enforcement infrastructure, with a particular focus on enhancing the security and facilities at ranger outposts. Although implementation began relatively recently, significant progress has already been achieved on the ground, with support provided to over 240 law enforcement patrols during 2021; the recruitment of 16 new law enforcement patrol staff; and construction activities mapped out and set for implementation.

- *Okapi Wildlife Reserve, Democratic Republic of the Congo:* Support to this area began under the MIKES project in 2016 and has been continued under the MIKES+ project with a new agreement signed in 2020. During the initial phase of the project, implementation was impacted by insecurity issues, combined with staff turnover in both government and non-government partners. However, critical field and communications equipment were provided to patrol staff. The project that began in 2020 has benefited from new management arrangements in the area with a public-private partnership being formed between the government and the implementing partner. This is evident in the rapid progress made under the second agreement, with 60 law enforcement patrol staff recruited from areas around the reserve, increasing the overall patrol staff by around 25%. Support through the provision of field equipment and patrol rations is also being provided. The other major focus of the second phase of support is improving the coverage of law enforcement operations throughout the Reserve. Activities to be implemented under this result area focus on rehabilitating outposts and accommodation and providing vehicles to enhance patrol mobility.

- *Tai National Park, Côte d'Ivoire*: This site has been supported under the MIKES+ project since mid-2021. This project focuses on three areas: improving the area's overall management and law enforcement capacity; strengthening the monitoring of elephants and other CITES-listed species; and developing a framework for the engagement and involvement of park adjacent communities and identifying activities to reduce human-elephant conflict. To date, activities have focused on the construction of an operations control room, and engagements with local authorities around the park as a precursor to embarking on a more extensive engagement with communities living around the area.

TENTATIVE BUDGET AND SOURCE OF FUNDING
FOR THE IMPLEMENTATION OF DRAFT RESOLUTIONS OR DECISIONS

According to Resolution Conf. 4.6 (Rev. CoP18) on *Submission of draft resolutions, draft decisions and other documents for meetings of the Conference of the Parties*, the Conference of the Parties decided that any draft resolutions or decisions submitted for consideration at a meeting of the Conference of the Parties that have budgetary and workload implications for the Secretariat or permanent committees must contain or be accompanied by a budget for the work involved and an indication of the source of funding.

The Secretariat provided details relating to the budget requirements for the MIKE Programme in document CoP19 Doc. 22 and the same information is included in this Annex. It should be noted that budgets required for Africa and Asia are provided separately and two scenarios are provided for each region, i.e., including focal site support and excluding focal site support (focal site support increases the budget required).

1. Estimated budget requirements for MIKE implementation in Africa

   a) Budget requirements that include support to MIKE focal sites (15 sites)

	Budget by Calendar Year in USD					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total USD**
MIKE Central Coordination Unit (CCU) Operating Costs						
Staff time	749,999	772,499	795,674	819,544	844,130	3,981,847
Travel	40,000	40,000	40,000	40,000	40,000	200,000
Office rent, equipment and supplies	34,000	34,000	34,000	34,000	34,000	170,000
Technical Support Costs						
MIKE Training Development (online/materials etc)	50,000	0	50,000	0	0	100,000
MIKES data analysis technical support	50,000	0	0	50,000	0	100,000
TAG Meetings	15,000	15,000	15,000	15,000	15,000	75,000
Focal Site Support						
MIKES focal site support packages (15 sites)	2,250,000	2,250,000	2,250,000	2,250,000	2,250,000	11,250,000
MIKE site network support						
MIKE site equipment	100,000	100,000	100,000	100,000	100,000	500,000
MIKE site training and support	250,000	250,000	250,000	250,000	250,000	1,250,000
MIKE network partnerships	100,000	100,000	100,000	100,000	100,000	500,000
MIKE Africa Meetings	0	50,000	0	0	50,000	100,000
Subregional MIKES Meetings	30,000	30,000	30,000	30,000	30,000	150,000
ETIS and AED						
Monitoring the illegal trade in ivory: ETIS	400,000	412,000	424,360	437,091	450,204	2,123,654
IUCN AfESG (African Elephant Database)	150,000	154,500	159,135	163,909	168,826	796,370
Visibility						
Material design, productions and dissemination	25,000	25,000	25,000	25,000	25,000	125,000
Compliance						
Audit	40,000	40,000	40,000	40,000	40,000	200,000
Evaluation	0	0	200,000	0	0	200,000
Total (USD) (excl PSC)	**4,283,999**	**4,272,999**	**4,513,169**	**4,354,544**	**4,397,160**	**21,821,871**

b) Budget requirements that exclude support to MIKE focal sites

	Budget by Calendar Year in USD					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total USD**
MIKE CCU Operating Costs						
Staff time	545,000	561,350	578,191	595,536	613,402	2,893,479
Travel	40,000	40,000	40,000	40,000	40,000	200,000
Office rent, equipment and supplies	34,000	34,000	34,000	34,000	34,000	170,000
Technical Support Costs						
MIKE Training Development (online/materials etc)	50,000	0	50,000	0	0	100,000
MIKES data analysis technical support	50,000	0	0	50,000	0	100,000
TAG Meetings	15,000	15,000	15,000	15,000	15,000	75,000
Focal Site Support						
MIKES focal site support packages (15 sites)	0	0	0	0	0	0
MIKE site network support						
MIKE site equipment	100,000	100,000	100,000	100,000	100,000	500,000
MIKE site training and support	250,000	250,000	250,000	250,000	250,000	1,250,000
MIKE network partnerships	100,000	100,000	100,000	100,000	100,000	500,000
MIKE Africa Meetings	0	50,000	0	0	50,000	100,000
Subregional MIKES Meetings	30,000	30,000	30,000	30,000	30,000	150,000
ETIS and AED						
Monitoring the illegal trade in ivory: ETIS	400,000	412,000	424,360	437,091	450,204	2,123,654
IUCN AfESG (African Elephant Database)	150,000	154,500	159,135	163,909	168,826	796,370
Visibility						
Material design, productions and dissemination	25,000	25,000	25,000	25,000	25,000	125,000
Compliance						
Audit	20,000	20,000	20,000	20,000	20,000	100,000
Evaluation	0	0	50,000	0	0	50,000
Total (USD) (excl. PSC)	**1,809,000**	**1,791,850**	**1,875,686**	**1,860,536**	**1,896,432**	**9,233,504**

2. Estimated budget requirements for MIKE implementation in Asia

a) Budget requirements that include support to MIKE focal sites (10 sites)

	Budget by Calendar Year in USD					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total USD**
MIKE CCU Operating Costs						
Staff time	48,250	49,383	50,549	51,750	52,988	252,920
Travel	40,000	40,000	40,000	40,000	40,000	200,000
Technical Support Costs						
MIKE Training Development (online/materials etc)	0	25,000	0	0	25,000	50,000
MIKES data analysis technical support	30,000	0	0	30,000	0	60,000
Focal Site Support						
MIKES focal site support packages (10 sites)	350,000	350,000	350,000	350,000	350,000	1,750,000
MIKE site network support						
MIKE site equipment	100,000	100,000	100,000	100,000	100,000	500,000
MIKE site training and support	250,000	250,000	250,000	250,000	250,000	1,250,000
MIKE network partnerships	100,000	100,000	100,000	100,000	100,000	500,000
MIKE Asia Meetings	0	50,000	0	0	50,000	100,000
Subregional MIKES Meetings	30,000	30,000	30,000	30,000	30,000	150,000
AsESG						
IUCN AsESG (Asian Elephant Database)	150,000	154,500	159,135	163,909	168,826	796,370
Visibility						
Material design, productions and dissemination	25,000	25,000	25,000	25,000	25,000	125,000
Compliance						
Audit	40,000	40,000	40,000	40,000	40,000	200,000
Evaluation	0	0	50,000	0	0	50,000
Total (USD) (excl. PSC)	**1,163,250**	**1,213,883**	**1,194,684**	**1,180,659**	**1,231,814**	**5,984,290**

a) Budget requirements that exclude support to MIKE focal sites

	Budget by Calendar Year in USD					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total USD**
MIKE CCU Operating Costs						
Staff time	48,250	49,383	50,549	51,750	52,988	252,920
Travel	40,000	40,000	40,000	40,000	40,000	200,000
Technical Support Costs						
MIKE Training Development (online/materials etc)	0	25,000	0	0	25,000	50,000
MIKES data analysis technical support	30,000	0	0	30,000	0	60,000
MIKE site network support						
MIKE site equipment	100,000	100,000	100,000	100,000	100,000	500,000
MIKE site training and support	250,000	250,000	250,000	250,000	250,000	1,250,000
MIKE network partnerships	100,000	100,000	100,000	100,000	100,000	500,000
MIKE Asia Meetings	0	50,000	0	0	50,000	100,000
Subregional MIKES Meetings	30,000	30,000	30,000	30,000	30,000	150,000
AsESG						
IUCN AsESG (Asian Elephant Database)	150,000	154,500	159,135	163,909	168,826	796,370
Visibility						
Material design, productions and dissemination	25,000	25,000	25,000	25,000	25,000	125,000
Compliance						
Audit	20,000	20,000	20,000	20,000	20,000	100,000
Evaluation	0	0	50,000	0	0	50,000
Total (USD) (excl. PSC)	**793,250**	**843,883**	**824,684**	**810,659**	**861,814**	**4,134,290**