CONVENTION ON INTERNATIONAL TRADE IN
ENDANGERED SPECIES OF WILD FAUNA AND FLORA
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Monitoring the Illegal Killing of Elephants (MIKE) and
Elephant Trade Information System (ETIS)

MINUTES OF THE 19TH MEETING OF THE TECHNICAL ADVISORY GROUP
First Session – 8th August 2023
Online Annual Meeting

In attendance:

Participants	8 August 2023
TAG members	
• Alexander McWilliam – IUCN Asia Regional Office	✓
• Andy Royle – TAG Statistician	✓
• Carl Schwarz – TAG Statistician	✓
• Jeanetta Selier – Southern Africa Subregion	✓
• Jen Mailley – TAG Global member	✓
• Lucy Vigne – TAG Global member	✓
• Prajna Panda – IUCN Asian Elephant Specialist Group	✓
• Samantha Armstrong – IUCN Asia Regional Office	✓
• Simon Nampindo – East Africa Subregion	✓
• Sumith Pilapitiya – South Asia	✓
• Wei Ji – Southeast Asia	✓
	✓
CITES MIKE Central Coordination Unit (CCU)	
• Constant Ndjassi – MIKE Programme Officer	✓
• Mrigesh Kshatriya – Data Analyst	✓
• Tanya McGregor – Acting MIKE Programme Coordinator	✓
• Thea Carroll – Acting Chief CITES Science Unit	✓
ETIS Programme representatives	
• Sharon Baruch-Mordo – ETIS – Senior Analyst	✓

Apologies for the session

• Holly Dublin – TAG Global member
• Hugo Jachmann – TAG Global member
• Leonard Mubalama – East Africa Subregion
• Massalatchi Mahaman Sani – West Africa Subregion
• Rob Slotow – IUCN African Elephant Specialist Group
• Steven Broad – TAG Global member
• Vivek Menon – IUCN Asian Elephant Specialist Group

8th August 2023 – SESSION 1 (16:00 – 18:20 EAT)

1. **Welcome remarks and Introduction**

   The meeting was opened by Tanya McGregor who thanked members for joining the meeting and the MIKE team for efforts put towards preparing the report. Tanya pointed out that the meeting was to be held online in two sessions (8th August and 10th August 2023), with the first session to cover the MIKE report and the second to cover the ETIS report. Members were invited to introduce themselves.

   Members were updated on the MIKE team members status, noting that while Mrigesh Kshatriya retired in September after serving as the MIKE Data Scientist for seven years, he was re-engaged by the MIKE programme to undertake the analysis of 2022 MIKE data. Members were informed that the MIKE team was in the process of recruiting a Programmer Officer who would perform both Programme Management tasks (previously carried out by Dave Henson) and Data Analysis (previously carried out by Mrigesh).

2. **Presentation of draft report – Monitoring the Illegal Killing of Elephants**

   Mrigesh Kshatriya presented the Proportion of Illegally Killed Elephants (PIKE) trend analysis covering the years 2003 to 2022. The following points were highlighted during the presentation:

   1. <u>MIKE Data flow and PIKE estimates at site level</u>
      Members were informed that MIKE data was collected through ranger patrols and information recorded is submitted to MIKE CCU or entered into the MIKE online database by site officers, and the data then undergoes a verification and cleaning process. Mrigesh also pointed out that MIKE had recently started collecting HEC information but the uptake by Parties has been slow, with further training collection of HEC data would improve.

      Mrigesh also presented the PIKE formula – dividing the number of illegally killed elephants by total number of caucuses reported for each site per year – and explained how this was used to derive annual PIKE estimates for each site using the Generalized Linear Mixed Model.

   2. <u>Data Submission for Africa and Asia</u>
      Mrigesh noted that the data used to generate PIKE estimates was from 25,232 elephant caucuses found between 2003 and 2022 from 67 MIKE sites. He also pointed out the data submission trends by site and year, noting that in 2022 reports were submitted by 68% of sites in central Africa, 87% of sites in eastern Africa, 100% of the sites in southern Africa and 83 % of sites in west Africa. He also highlighted that Angola had submitted data for the first time, providing data dating back three years.

      Key comments
      It was noted that in west Africa, elephant populations are small and fragmented and the probability of finding carcasses are small – historically west Africa has reported a smaller number of carcasses. It was also noted that in central Africa there is difficulty in detecting elephant carcasses due to the habitat and vegetation.

      TAG Recommendations
      The report should include estimated number of elephants in the sites to give a clear picture of the percentage of carcasses.

   3. <u>Annual reporting statistics for Africa and Asia</u>
      Mrigesh highlighted that the total number of sites that reported carcass information were 59 sites in 2022 compared to 63 sites in 2021 (to note, 2021 data for some sites was received after analysis was conducted in 2022). He also noted that carcass information was submitted by 30 countries in 2022, slightly lower than in 2021, when 31 countries submitted data.

      Mrigesh also pointed out that in 2022 there were 1,832 carcasses reported, an increase of 506 carcasses from 2021. He highlighted that from the 1,832 carcasses reported in 2022, 306 were reported as illegally killed, compared to 206 in 2021. In 2022 there was an increase in carcass numbers for two sites by 55% and 66% compared to 2021, due to severe drought conditions.

      Key Discussions

It was noted that from 2016 to 2022 the number of illegally killed elephants decreased in Africa. This was attributed to various factors associated to illegal killing as reported in CoP 19 Doc 66.5.

4. Application of Generalized Linear mixed model to derive annual PIKE estimates and Trends for Africa subregions and Asia
TAG members were taken through the process of conducting annual PIKE trend analysis using information received from the sites for the annual continental and regional PIKE average trends. Mrigesh highlighted that from 2003 to 2011 the PIKE trend in Africa increased, and then decreased from 2011 to 2022. Africa's PIKE estimates for 2022 were the lowest in since 2003 at 0.33, at a 95% Confidence Interval.

Mrigesh also noted that based on the posterior distribution analysis, unweighted PIKE estimates show a linear downward trend in central Africa, east Africa and southern Africa from 2018 to 2022. Over the same period there was no statistical information to support a downward trend in PIKE estimates in west Africa.

Mrigesh highlighted that PIKE estimates for eastern Asia and southeast Asia started in 2005 and the PIKE analysis for Asia was based on 4,554 elephant carcasses from 30 MIKE sites. Six per cent of elephant carcasses were from southeast Asia while 94% were from south Asia. He also noted that nine sites in Asia reported zero carcasses.

Mrigesh pointed out that in Asia the number of reporting countries increased from 11 to 13, the number of carcasses decreased from 197 to 188, and the number of illegally killed carcasses dropped from 37 to 18 in 2022, compared to 2021. He also pointed out that PIKE estimates in Asia from 2005 to 2021 have remained relatively flat and constant.

Key Discussions
It was noted that southeast Asian countries have reported zero carcasses for several years, while generally these are the countries where trade or poaching-related ivory routes are found. This was attributed to low monitoring of elephants in southeast Asia and the probability that the MIKE sites being monitored are not the correct sites. It was highlighted that a statistical review was done of the sites and a recommendation to consider other sites was presented to the range States – only Bangladesh responded, to expand a MIKE site to cover the whole landscape.

It was also noted that it was a challenge to identify a direct link between ivory trade and illegal killing of elephants given the strong laws in this region, and that trade might be as a result of ivory stockpiles.

TAG Recommendations
It was recommended to have more appropriates MIKE sites in southeast Asia and conduct a consultation with range states to identify whether more sites or a whole landscape can be added to MIKE Programme.

5. PIKE and Human Elephant Conflict
Mrigesh highlighted the influence of HEC on PIKE estimates. He pointed out that reporting on HEC depends on the country specifics; where it could be reported as illegal, while in other countries it could be reported as management related deaths or other types of death.
Mrigesh pointed out that in 2022 from 1,832 carcasses reported in Africa 330 (18%) were a direct result of HEC. Six per cent had missing Information. From the 330 elephant carcasses 36 % were categorized as illegal and 64 were categorized as management deaths. In Asia, out of 188 carcasses recorded in 2022, seven per cent were directly linked to HEC, 15% were not related to HEC, while 77% had missing information.

Mrigesh also pointed out that PIKE estimates might be affected due to instances where conflict-related deaths might not be poaching-related but are reported as illegal in some countries, while other countries reported as other types of death.

Key Discussions

It was noted that an experimental weighted average of PIKE estimates had been prepared, which is highly sensitive in larger sites, where a site with more elephants has more impact compared to site with fewer elephants. The weighted PIKE estimates are still experimental due to a lack of year-by-year information on the relative number of elephants per site.

It was noted that Asia had a high number of records with missing information, in comparison to Africa. Improved reporting in Africa compared to Asia was attributed to more training engagements in Africa than in Asia. Funding was primarily received for Africa, and sessions were held with sites and national focal points in Africa to explain the importance of HEC information, while a similar training was not conducted in Asia. In southeast Asia countries there is lack of clarity of whether HEC is part of the MIKE programme and there is need to clarify this. It was also noted that in southeast Asia there is a higher risk of HEC than poaching.

TAG Recommendations
- ➢ It was recommended that MIKE should indicate type of HEC, as the report includes HEC in illegal killing, natural death and management categories. This should be standardized to avoid biases due to the various national laws.
- ➢ In southeast Asia there are illegal killings related to HEC, and this information needs to be reported under the MIKE programme.
- ➢ MIKE programme should clarify for Asian range States whether HEC information is included in data MIKE collection since the perception is that MIKE does not collect HEC information.
- ➢ MIKE should include HEC as illegal killing given that most countries consider killing elephants as illegal even when it involves crop raiding (Management Problem).
- ➢ MIKE should take into consideration the population size of each site.
- ➢ Trophy hunting killing should be included in Management related death.
- ➢ For sites that did not report carcass information due to insecurity, it was recommended to use estimates for rough natural deaths given that the rough population is known in these sites, to make the statistics more meaningful.
- ➢ It was considered that it was premature to conclude that there is a downward trend in PIKE in African sites for the past five years, given that there were countries that reported carcass information for the past three years in the current reporting period and the new sites reporting pattern might have been different in the three years.
- ➢ TAG recommended that the patrol effort recorded should include number of elephants encountered, not just number of carcasses encountered, to improve sampling efforts.

6. Tasks Completed and Remaining

Mrigesh informed members that a paper titled "*Drivers and facilitators of the illegal killing of elephants across 64 African Sites*" was published in January 2022 and presented at CoP 19. This paper looked at covariates used to explain PIKE levels in various subregions and explain trends at the continent level.

Mrigesh pointed out that the methodology and technical documents for 2021 analysis have been published in Git Hub and only summary statistics data (Total number of carcasses reported by site and year) is shared with the public. He also pointed out that the 2022 reports will be made public in September before the 77th meeting of the Standing Committee.

3. AOB

Members were reminded of the upcoming in-person meeting slated for early 2024. They were also reminded of the second session of the annual TAG meeting, to be held on 10 August 2023, to discuss the ETIS report. No other business was raised, and the first session of the TAG meeting was closed.

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Monitoring the Illegal Killing of Elephants (MIKE) and
Elephant Trade Information System (ETIS)

MINUTES OF THE 19TH MEETING OF THE TECHNICAL ADVISORY GROUP
Second Session – 10th August 2023
Online Annual Meeting

In attendance:

Participants	8 August 2023
TAG members	
• Andy Royle – TAG Statistician	✓
• Carl Schwarz – TAG Statistician	✓
• Jeanetta Selier – Southern Africa Subregion	✓
• Jen Mailley – TAG Global member	✓
• Lucy Vigne – TAG Global member	✓
• Prajna Panda – IUCN Asian Elephant Specialist Group	✓
• Simon Nampindo – East Africa Subregion	✓
• Steven Broad – TAG Global member	✓
• Sumith Pilapitiya – South Asia	✓
• Wei Ji – Southeast Asia	✓
	✓
CITES MIKE Central Coordination Unit (CCU)	
• Constant Ndjassi – MIKE Programme Officer	✓
• Mrigesh Kshatriya – Data Analyst	✓
• Tanya McGregor – Acting MIKE Programme Coordinator	✓
• Thea Carroll – Acting Chief CITES Science Unit	✓
• Wilson Ngugi Ndungu – UNV	✓
TRAFFIC ETIS Programme representatives	
• Sharon Baruch-Mordo – Senior Specialist – Elephant and Rhino Trade	✓
• Louisa Sangalakula – ETIS Program Officer	✓
• Paola Mosig Reidl – Research and Analysis Support	✓
• Rachele Stoppoloni – Senior Programme Coordinator – Research and Analysis	✓

Apologies for the session

• Alexander McWilliam – IUCN Asia Regional Office
• Samantha Armstrong – IUCN Asia Regional Office
• Holly Dublin – TAG Global member
• Hugo Jachmann – TAG Global member
• Leonard Mubalama – East Africa Subregion
• Massalatchi Mahaman Sani – West Africa Subregion
• Rob Slotow – IUCN African Elephant Specialist Group
• Vivek Menon – IUCN Asian Elephant Specialist Group

1. <u>**Welcoming remarks**</u>

Sharon Baruch-Mordo opened the meeting and thanked the participants for attending.

2. <u>**ETIS Data**</u>

Sharon provided an overview of the ETIS data collection process and noted that data collection for the year 2022 was delayed due to the delayed posting of the Notification following CoP19, and that only 51 Parties had reported ETIS data, while 20 Parties reported to have made no seizures.

Sharon also pointed out that in 2022 there were 1,066 seizures, where 86% were MA (Management Authority) data and 14% non-MA (Non-Management Authority) data. She also highlighted that there were 12 tons of illegal ivory seized in 2022, noting that this was a reduction compared to previous years. Finally, she highlighted that there were fewer large seizures by weight compared to before COVID 19, however, few large seizures greater than one ton indicates persistent organized crime activity, and therefore continued monitoring is needed.

Key Discussions
It was noted that there is a significant possibility that reduction in number of seizures of large weight may be a result of a COVID 19 effect or other law enforcement efforts.

3. <u>**Implementation of the ETIS review recommendations**</u>

i.   ETIS Data Validation
To address review recommendations #5 and #8, Sharon provided an overview of the data validation process (through ETIS Online flow chart) noting that there are two pathways for entering ETIS data, and indicating the action taken for validating Management Authority and Non-Management Authority data.

She also outlined the action taken under ETIS in the validation process for 2022 data, in which Notification No. 2022/083 was sent to Parties requesting them to review data collected by ETIS and Management Authority data implicating the Party. Sharon highlighted the process and pathways followed when Parties submit seizure inquiries, noting that all affected Parties are informed throughout the seizure inquiry. She pointed out in summary that the validation process had positive results including the collaboration between the Parties requesting information of when they were implicated in the trade chain.

Key Discussions
It was pointed out that concerns had been raised by the Secretariat in using Non-MA data in the ETIS analysis report, and it is important to indicate the number of Parties that had concerns with the use of Non-MA data. The Secretariat also wanted to clarify that seizures that had a raised inquiry were not included in analysis, which was confirmed by TRAFFIC.

It was also highlighted that the ETIS report should clarify that all seizures are essentially carried out by the country governments, and that Non-MA sources, such as for example NGOs and WCO, represent channels of communication of how the seizure data were collected and entered into ETIS, but that the actual seizures were conducted by the country governments. It was further noted that the report should indicate the standards of acceptability for Non-MA data.

ii.   Appropriateness of ETIS Data
Sharon highlighted that the review recommendation #19 indicated that ETIS should determine the appropriateness of all data elements stored in ETIS. She provided an update of the proportion of MA and Non-MA data from 2008 to 2022 and the breakdown by Non-MA sources (WCO, CITES, NGO, Inter-gov., etc.) noting the number of seizures and percentages collectively for all ETIS data. Sharon presented the data by country using boxplot graphs, which are included in the annex of the ETIS report. During the discussion she presented a question to the TAG to ask whether this presentation of MA and Non-MA data should be included in ETIS reports.

Sharon also addressed review recommendation #28 to explore the impacts of removing Non-MA data on trend analyses results. She provided modeling results by ivory type and weight classes relating to raw and worked ivory, and small, medium or large seizures. Sharon compared the trend results from including only MA data, with results from the combined data of both MA and Non-MA sources. She noted that duplication in non-MA data and data reported by MAs are considered as MA sourced, thus are not reported as part of Non-MA data.

Key Discussions

TAG members noted the need to specify whether seizures were being done in country or at country border points. Sharon suggested this cannot be differentiated with the resolution of ETIS data at hand.
A TAG member further noted that affected Parties may not appreciate being exposed through the display of information in the ETIS report. There was further discussion by TAG members about the ability of the intended audience to correctly interpret the boxplot graphs.

TAG members pointed out that Non-MA data may have significant influence on the results, and it seems that a relatively low difference in the percentage of Non-MA data generates considerable differences. It was postulated that some countries do not report on domestic seizures and perhaps that is the cause for the difference. TAG statisticians suggested it could be a smoothing effect that pulls the curves; therefore the difference seems large between the curves even if not as many seizures are Non-MA. Furthermore, it was also noted that there seemed to be a higher number of Non-MA data post-2012 and there was discussion that might have stemmed from a data collection effort following the modeling development implemented about that time.

TAG members indicated that it was important to demonstrate the impact of Non-MA data in the ETIS model, and provide capacity building for Parties that do not report MA data.

TAG recommendation

> ➢ ETIS should maintain the presentation of breakdown of data by MA and Non-MA sources in the report for transparency.
> ➢ ETIS should include a narrative in the report to provide an explanation for the interpretation of the boxplots displaying Non-MA sources by country.
> ➢ ETIS should include non-MA data in its model for transparency and in the report when interpreting the results, and link it to its validation process and capacity needs for some Parties.

iii.   Modeling development - ETIS Covariate

In relation to review recommendation #24, to test other covariates in the ETIS models, Sharon outlined the variables used to model seizure and reporting rates as part of the bias-adjustment of the modelling. Reporting rate covariates include an ETIS reporting covariate and a CITES reporting covariate. The ETIS reporting covariate is derived from ETIS data, but the current approach to calculate that covariate relies on data collection methodologies that are now obsolete, following the launch of ETIS Online as the main portal for data collection. Sharon proposed a new formula for a reporting covariate that is based on a ratio of Non-MA reported data divided by a summation of both MA and non-MA data, to calculate an ETIS reporting ratio. She compared the modeling results with the current, older approach, with the new proposed reporting covariate.

Key Discussions
One TAG member noted that the new model gives more weight to MA-reported data and less weight to Non-MA data, which raises a concern given that some Parties only report through Non-MA sources, which in turn affects their reporting trends. Another suggested that the overlap between the trend curves seemed large, while another suggested the differences seemed acceptable. A TAG statistician suggested that sample sizes are important to show, to be able to interpret which difference to be concerned with. Sharon suggested that perhaps a table showing the breakdown of the MA and Non-MA data, similar to those shown in previous sessions, would provide information on the sample sizes.

TAG recommendations

- ETIS report to include the actual number of transactional data seen within a specific period of time in the trend analysis, to provide more information to the consumers of the report.
- ETIS should look further into the new model type of input data.
- ETIS should use the new covariate approach.
- ETIS to produce a table of the breakdown of data by MA and Non-MA sources by ivory type and weight classes to aid in the interpretation of the differences in the modeling results excluding and including and Non-MA data.

iv.   Mobilizing resources

Sharon highlighted that ETIS has a budget shortfall for the years 2024 to 2025, and shared a list of donors that ETIS had managed to secure funding from for 2024 and 2025.

4. **Feasibility of ETIS data in analysis of legal domestic ivory markets**

To address CoP19 Decisions 19.99 – 19.101, Sharon highlighted that TRAFFIC reviewed CITES CoP and Standing Committee documents dating back 10 years to identify the notifications, proposals and outcomes of discussions on legal domestic ivory markets of all Parties. Through this review 50 Parties were identified, however there was no clear criteria yet on what constitutes a domestic ivory market for the selection of these markets for inclusion in analysis.

Sharon also highlighted that ETIS was proposing to focus on three ETIS data elements for raw and worked ivory, which would include transaction indices, distribution of weight seized and trade links over time. Sharon also pointed out that ETIS was seeking guidance from the TAG on the best criteria for inclusion of Parties and feedback on proposed analysis.

Key issues discussed.

TAG members noted that there is a challenge in identifying Parties that have legal domestic ivory markets and there is not a clear definition of legal markets. TAG statisticians also noted that there is a need to have well-defined questions for the analysis to address, for example in terms of questions of contrasts. Otherwise, it is very unclear what is being asked with this Decision.

The Secretariat noted low response to the CITES Notification calling to report on domestic ivory markets and that there is a lot of gaps in the information. TAG members also pointed out that routing information was not fully reliable given that seizure locations are mostly not part of the trade route and that some Parties do not provide information on whether they are the end market.

TAG members suggested that ETIS reports that it is difficult to determine which Parties have domestic ivory markets, as almost all Parties that have a ban also have some exceptions. In that case all countries should be included, which is basically the overall ETIS analyses, so why divert resources into a separate analysis that distracts from main issues.

TAG recommendations

- In paragraph 41 and elsewhere in the report, fix references to SAR or Territories of China.
- In paragraph 41 clarify the countries that have some form of legal domestic market, even if they self-reported that they have a ban on legal domestic trade.
- ETIS report should highlight the concerns from the TAG in conducting analysis, and seek to obtain clear guidance from the Standing Committee on the definition of a domestic ivory market and the purpose of the analysis.